MY FOREIGN DOVES AND PIGEONS

SF
465
A43
1911Z
NZP

ROSIE ALDERSON

THE TURTLE DOVE.

Drawn by E. F. Bailey.

4165
A43
1911z
NZP

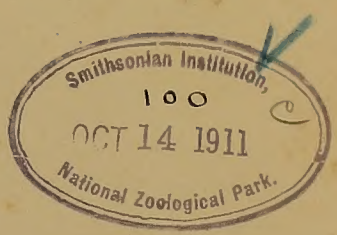
598.6
A36

My Foreign Doves and Pigeons

BY

ROSIE ALDERSON

WITH 100 ILLUSTRATIONS FROM PHOTOGRAPHS AND DRAWINGS.



"THE FEATHERED WORLD"
"CANARY AND CAGE-BIRD LIFE"
9, ARUNDEL STREET, STRAND, LONDON, W.C.

To

MY DEAR MOTHER,

Who, loving Nature herself,

Has taught me from a child

to love it too;

And also

To all the many kind friends

My birds have brought me

All over the world,

Without whose very generous help

This little book

Might never have been written.

I especially owe my very grateful thanks

to

T. H. Newman, Esq., F.Z.S., M.B.O.U.

H. Willford, Esq.

A. G. Butler, Esq., Ph. D., F.L.S., F.Z.S., M.B.O.U.

D. Seth-Smith, Esq., F.Z.S., M.B.O.U.

W. E. Teschemaker, Esq., B.A.

H. E. Attewell, Esq.

Rosie Alderson,
Park House, Worksop,
Notts.

March, 1911.

CONTENTS.

CHAPTER I. PAGE

General Management, Housing, Feeding, &c. - - - - - - - - - - - - 9

CHAPTER II.

Nesting - 24

CHAPTER III.

Packing and Sending Away, and Nursing in Sickness and Accident - - - - - - - - 29

CHAPTER IV.

Sub-Family *Treronidae*.

Vinago delalandei - - - - - - - - - - - - - - - - - - - 36

Typical Pigeons - 37

Columbidae.

The Triangular Spotted Pigeon (*Columba guinea*) - - - - - - - - - - - - 37

,, Spotted or Spot-winged Pigeon (*Columba maculosa*) - - - - - - - - - - 38

,, White-crowned Pigeon (*Columba leucocephala*) - - - - - - - - - - - - 38

,, Rufous Pigeon (*Columba rufina*) - - - - - - - - - - - - - - 40

CHAPTER V.

Family *Peristeridae* - - - - - - - - - - 42

The Martinican (or Aurita) Dove (*Zenaida aurita*) - - - - - - - - - - - - 42

,, White-winged Zenaida Dove (*Melopelia leucoptera*) - - - - - - - - - - 44

,, Madagascar Turtle Dove (*Turtur picturatus*) - - - - - - - - - - - - 46

,, English Turtle Dove (*Turtur turtur*) - - - - - - - - - - - - - - 48

,, Barbary Turtle Dove (*Turtur risorius*) - - - - - - - - - - - - - 48

,, Half-collared Turtle (*Turtur semitorquatus*) - - - - - - - - - - - - 50

,, Deceptive Turtle Dove (*Turtur decipiens*) - - - - - - - - - - - - - 51

,, Damara Turtle Dove (*Turtur damarensis*) - - - - - - - - - - - - - 51

,, Dwarf (or Ruddy) Turtle Dove (*Turtur humilis*) - - - - - - - - - - - 52

,, Necklaced Dove (*Turtur tigrinus*) - - - - - - - - - - - - - - 54

,, Senegal Turtle Dove (*Turtur senegalensis*) - - - - - - - - - - - - - 55

CHAPTER VI.

Ground Doves - - - - - - - - - - 56

The Bar-shouldered Dove (*Geopelia humeralis*) - - - - - - - - - - - - 56

,, Peaceful Dove (*Geopelia tranquilla*) - - - - - - - - - - - - - - 58

,, Zebra Dove (*Geopelia striata*) - - - - - - - - - - - - - - - 59

,, Diamond Dove (*Geopelia cuneata*) - - - - - - - - - - - - - - - 60

CONTENTS.—*continued.*

The Scaly Dove (*Scardafella squamosa*) - - - - - - - - - - - - - - 61
,, Picui Dove (*Columbula picui*) - - - - - - - - - - - - - - - 61
,, Passerine Dove (*Chamaepelia passerina*) - - - - - - - - - - - - - 62
,, Talpacoti (or Cinnamon) Dove (*Chamaepelia talpacoti*) - - - - - - - - - - 64

CHAPTER VII.

The Bronze-winged Doves and Pigeons.

The Cape (or Harlequin) Dove (*Aena capensis*) - - - - - - - - - - - - - 65
,, Tambourine Dove (*Tympanistria tympanistria*) - - - - - - - - - - - - 66
,, Indian Green-winged Dove (*Chalcophaps Indica*) - - - - - - - - - - - 68
,, Bronze-wing Pigeon (*Phaps chalcoptera*) - - - - - - - - - - - - - 69
,, Brush Bronze-wing Pigeon (*Phaps elegans*) - - - - - - - - - - - - - 71
,, Partridge Bronze-wing (*Geophaps scripta*) - - - - - - - - - - - - - 74

CHAPTER VIII.

Crested Dove and Pigeon - - - - - - - - - - 75
The Plumed Ground Dove (*Lophophaps leucogaster*) - - - - - - - - - - - - 75
,, Australian Crested Dove (*Ocyphaps lophotes*) - - - - - - - - - - - - 76

CHAPTER IX.

Sub-family *Geotrygoninae* - - - - - - - - - - 78
The Rufous Dove (*Leptoptila reichenbachi*) - - - - - - - - - - - - - 78
,, Solitary Ground Dove (*Leptoptila chloroauchenia* - - - - - - - - - - - 80
,, Violet (or White-fronted) Dove (*Leptoptila Jamaicensis*) - - - - - - - - - 82
Wells' Dove (*Leptoptila wellsi*) - - - - - - - - - - - - - - - 84
The Partridge (or Red Mountain) Dove (*Geotrygon montana*) - - - - - - - - - 85
,, Bleeding Heart Pigeon (*Phlogoenas luzonica*) - - - - - - - - - - - - 86
,, Wonga Wonga Pigeon (*Leucosarcia picata*) - - - - - - - - - - - - - 90
,, Black-bearded Dove (*Starnoenas cyanocephala*) - - - - - - - - - - - - 92
,, The Francisian Dove - - - - - - - - - - - - - - - - - - 94
,, Malayan Ring Dove - - - - - - - - - - - - - - - - - - 94

I owe my very grateful thanks to The Avicultural Society and The Foreign Bird Club for the loan of blocks, with permission to use them, and to the following gentlemen for their very kind help of photographs to illustrate the book, viz. :—Messrs. H. Willford, D. Seth-Smith. F.Z.S., M.B.O.U., and T. H. Newman, F.Z.S., M.B.O.U., W. E. Teschemaker, B.A., and Dr. C. Gouldesbrough.

In all instances where no name is given the photographs were taken by myself, chiefly from my own birds. I have also to thank Mr. Thorpe for kindly allowing me to take the photographs of Crested, White-winged and Aurita Doves from birds in his aviaries at Worksop.

ROSIE ALDERSON.

LIST OF ILLUSTRATIONS.

The Turtle Dove - - - - Frontispiece

PAGE

Young Violet Dove - - - - - - - 9
No. 1 Aviary Ground Plan - - - - - 10
1.—Aviary No. 1. 2.—Interior of Aviary No. 3 (as first put up, before let-out cages, etc., were added) - - - - - - - 11
No. 2 Aviary - - - - - - - - 12
No. 2 Aviary (with shutters down) - - - 13
No. 3 Aviary (Front View) - - - - 15
No. 3 Aviary (Back View) - - - - 17
No. 3 Aviary (Plan) - - - - - 19
No. 4 Aviary (Plan) - - - - - 21
Black-Bearded Doves - - - - - 22
Dwarf Turtle and Brush Bronze-wing - - 22
Crested Senegal and White-winged Doves - 23
Plumed Ground Dove - - - - - 24
Crested Dove - - - - - - - 24
Passerine Dove - - - - - - - 31
Violet Doves - - - - - - - 31
Dwarf Turtle Dove - - - - - - 32
No. 4 Aviary - - - - - - - 36
White-crowned Pigeon - - - - - 38
1 and 2.—Spotted Pigeon. 3.—Spotted Pigeon and Brush Bronze-wing Pigeon. 4.—Rufous Pigeon and Bleeding Heart Pigeon. 5 and 6.—White-crowned Pigeon. 7.—White-crowned and Crested Pigeons and Senegal Dove - - 31
1, 2, 3.—Aurita Doves. 4.—English Turtle Dove. 5, 6.—Barbary Doves. 7.—Barbarys and English Turtle Dove. 8, 9.—White-winged Doves - - - - 43
1.—Senegal Doves. 2.—Senegal Dove Sitting. 3.—Senegal, White-winged Doves, and Crested Pigeon. 4 and 7.—Ruddy (or Dwarf Turtles). 5.—Hybrid Dove (Necklace and Senegal). 6.—Necklaced Doves and Indian Green-winged Dove. 8.—Madagascar Turtle Doves - - - 47
Dwarf or Ruddy Turtle - - - - - 53
1, 2, and 3.—Diamond Doves. 4.—Picui and Plumed Ground Dove. 5.—Picui Dove. 6.—Passerine Dove - - - - 57

PAGE

1, 2.—Hen Bronze-wing Pigeon. 3.—Cock Bronze-wing Pigeon. 4, 5, 6.—Partridge Bronze-wings. 7.—Cock Brush Bronze-wing. 8.—Cock Brush Bronze-wing and Bleeding Heart Pigeon. 9.—Cock Brush Bronze-wing and Ruddy (or Dwarf) Turtle Dove. 10.—Cock Solitary Ground Dove. 11.—Cock Solitary Ground Dove and Ruddy Turtle Doves. 12.—Hen Indian Green-winged Dove. 13.—Cock Indian Green-winged Dove and Barbary Dove - - - - 67
The Bronze-winged Pigeon - - - - 70
Brush Bronze-wing Pigeon and Nest. 1.—Female on Nest, Male perched near. 2.—Nestling 16 days old. 3.—Male Covering Nestlings - - - - 72
Partridge Bronze-wing Pigeon - - - 74
Australian Crested Pigeon - - - - 77
1, 2.—Australian Crested Pigeon (Adult and Young Bird). 3.—Crested, Senegal, White-winged, and Turtle Doves. 4, 5.—Rufous Dove (Cock). 6.—Red Mountain Dove. 7.—Red Mountain and Black-bearded Dove. 8.—Crested and Senegal Doves. 9, 10.—Plumed Ground Doves. 11.—Violet Doves - - - 81
Violet or White-fronted Dove. 1.—Young Cock. 2.—Young Birds just left the Nest. 3.—Old Cock, Hen, and Young Cock - - - - - - - - 83
Young Bleeding Heart Doves - - - - 87
1, 2, 3.—Young Bronze-wing Pigeons. 4.—Young Brush Bronze-wing Pigeon. 5.—Young Rufous Doves. 6.—Young Senegal Doves. 7, 8.—Young Damara Turtle Doves - - - - - - 89
1.—Bleeding Heart Pigeon and Rufous Pigeon. 2.—Bleeding Heart Pigeon. 3.—Bleeding Heart Pigeon and Black-bearded Doves. 4.—Black-bearded Doves. 5.—Plumed Ground Doves. 6.—Francisian Dove. 7.—Wonga-Wonga Pigeon - 91
Dwarf Ground Dove - - - - - - 93
Finis - - - - - - - - - 95

My Foreign Doves and Pigeons.

CHAPTER I.

YOUNG VIOLET DOVE.

THIS little book must not be considered in any other light than that of a simple hand-book, treating only of those doves and pigeons I have actually kept. Most of these birds are within the reach of any amateur, and can be procured in England (if you watch your opportunity), at a seasonable time and a reasonable price. In many instances the birds described have bred in English Aviaries, and nearly all are hardy.

I have not attempted to give any scientific description, but just to recount the ordinary daily life of my own birds, and, where I could gather it, the experience of others, and also some short notes on the wild life of the birds.

Doves as a family have much to recommend them. They are hardy, long-lived, and show their contentment in captivity by frequently nesting and rearing their young. If their colouring is quiet, it is also singularly harmonious, and the blending of the different shades is as refined as it is beautiful. Where could you find anything more lovely than a cock Violet dove in perfect health and plumage? He is an object to feast one's eyes on for long—and yet to look again.

Then another interesting feature about doves is to study their different calls, for each bird has several—to be able to distinguish between the war-cry note and the soft coo of the cock, telling the hen his little love story. They can express their moods as surely as a human being, and to interpret this is a study in itself.

It is nearly 13 years ago since I started keeping doves, beginning, as I suppose was only natural, with our old friends a pair of Barbary doves. At this time dove keeping was a singularly lonely hobby—many people kept foreign birds, but *not* doves. Most of my experience was learned in the sad school of adversity, for little was written (that was accessible to me) on the subject. I had Dr. Greene's "Notes on Cage Birds" and Dixon's old "Dove Cote and Aviary," but that was about all. A year or two before, however, I had read in *The Feathered World* an article by the late Mr. O. E. Cresswell on his foreign doves. How I longed to possess all the kinds he described, never for one moment thinking I should keep in the future nearly every one of these, and many more besides.

And here let me pause just a minute to note a very pleasant side of bird keeping—I mean the many friends your birds will make for you—and in one and all there is the same trait, a kindly and generous fellow feeling in a mutual hobby. A chance question, and reply, on a little Turtle dove was the beginning of a long and valued friendship with Mr. and Miss Cresswell, and when he died I felt as if I had lost my earliest dove-loving friend, for of all his beautiful birds his doves, I think, were his favourites.

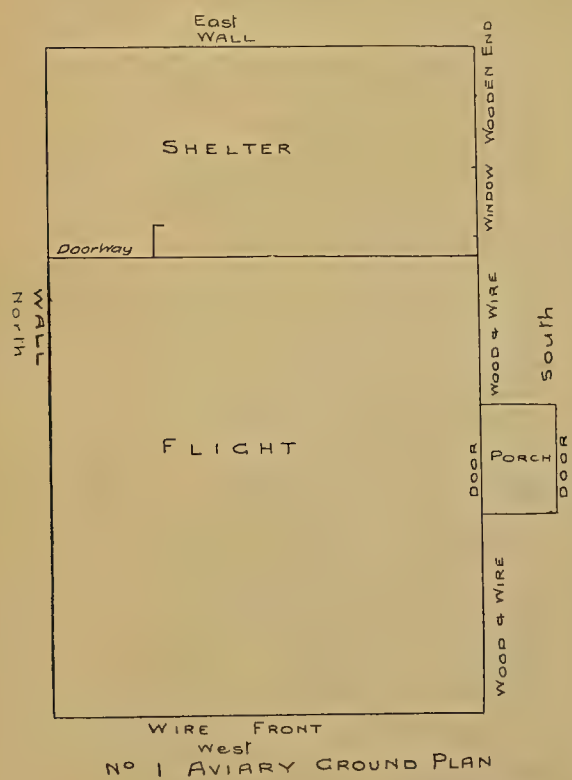
First, before I describe the birds, I must begin and tell you a little of how, and where, I keep my doves, so I will start with a short description of my aviaries. They are all different types.

No. 1 is my original doves' aviary. It is about 19 ft. long by 12 ft. wide. The north and east sides are built against high walls; on the west the half-inch wire netting comes right down to the ground, but on the south it is boarded up for two feet. On this last side is a porch with double doors, the outer one of wood, the inner one of wire. A great drawback to this aviary is the lack of sunshine, owing to the fact that so many trees are growing round it, but at the time I used it for doves (it is now the home of a Crowned Crane) this did not seem to affect their health in any way. A shelter, with a door into the flight, runs across the eastern end. It has wire in front to within two feet of the ground and a small wire-covered window faces the south. The shelter is white-washed inside.

When first this aviary was put up, the floor of the flight was earth, the top of it wire-netting. Rats began to make their appearance, so the flight

floor was cemented and tiled over, and, to keep the place dryer, a glass pointed roof was substituted for the wire netting one. This made the aviary look much nicer; of course the glass roof had to be lined (a few inches from the glass) with a kind of very strong muslin, known at the drapers as "strainering." This was a precaution to prevent the doves dashing against the glass if they flew upwards.

No. 2 aviary was built a little later than the first one. It has no flight, but is just a house built against a high brick wall and facing due south. It is lower down the garden and stands in a sunny



No 1 Aviary Ground Plan

old-fashioned orchard, and the outer part of the aviary front, that is not wire, is covered with climbing roses and ivy.

This aviary is composed of two thicknesses of wood with felt between, and the span roof is of corrugated iron lined with wood. The whole of the inside is varnished, except the brick wall that forms the back, which is white-washed. The dimensions are 16 ft. long by 9½ ft. wide and 13½ ft. high at the highest point in the roof. The front of the aviary is wired to within 2 ft. of the ground, and along the whole length ten glass-panelled moveable shutters are fastened by means of bars and screws. In summer weather the shutters are removed altogether, but in very cold weather they are all kept up (forming a large window 16 ft. long by 5½ ft. high). These shutters can be fixed or removed in a few minutes, and are all independent of each other, so that one or more can be taken down without interfering with the rest.

The inside is divided by a wire partition (boarded up a short distance from the floor) into two parts, one being rather larger than the other. In the end of each is a wire-covered opening window, and in the roof of each a glass skylight, also made to open and covered with wire. The skylights are regulated with cords and pulleys, and are left open slightly at night all through the year. Each of the two portions of the aviary is entered at each end by a porch and double doors, so that there is no fear of the birds escaping on anyone going inside. I consider a double door is a necessity to every aviary, for without it accidents are bound to happen. A shelf, for seed tins, etc., is in each porch, over the door, and this is handy, as it forms a little store place for food without having to keep it away from the aviary. In the centre of each floor is a small cement basin with continual running water, which can be turned up or down at will.

This aviary is heated with hot water pipes. The feed-tank (with a cover on) is at one end of the pipes, and now and then wants replenishing with water. There is an escape pipe from it in case the water should boil over. This pipe is fixed in the tank and through the aviary end, so that the water can never rise above a certain height, the escape pipe drawing off all the overflow into a cement gutter that runs round three sides of the aviary. This gutter has two grates and a pipe leading into a dumb well, and the overflow from the fountain (in the centre of each half of the aviary) runs into the dumb well also.

A dumb well is simply a deep hole dug into the ground, the earth being cleared out and its place filled with half-bricks and rubble, put in anyhow, so that there are spaces left amongst them for the water to run through and to drain away. Of course, the level of your rubble must be *below* the level of the waste pipe flowing into it.

It is a good plan to cover the top of your dumb well with a large flag-stone just a few inches below the ground, then put earth or grass on the top of this so as to make it look like its surroundings. The flag-stone has several advantages. In the first place it keeps the ground from sinking in over the well, then, again, it prevents dirt silting into the well, and helping to choke it, and also should anything ever happen to interfere with the

PLATE I.

1

2

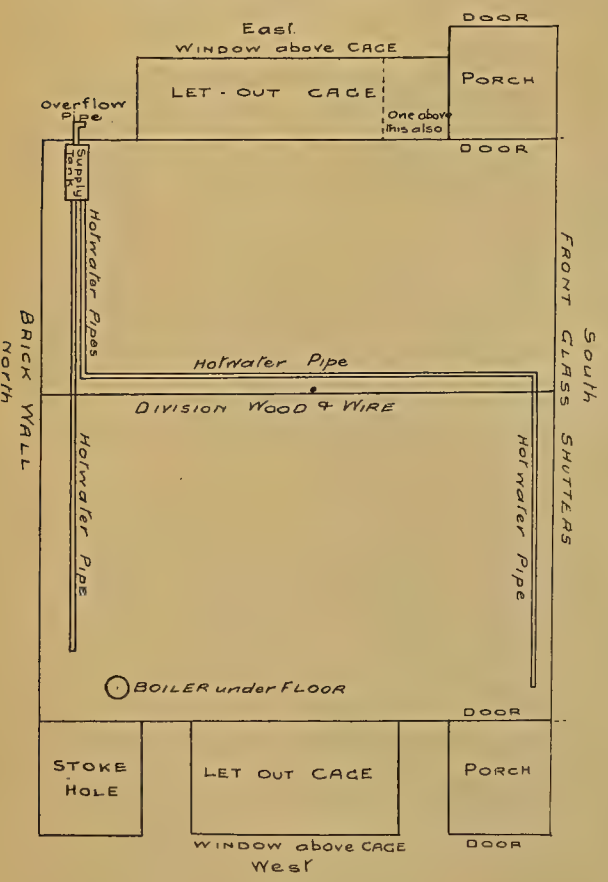
1.—Aviary No. 1.

2.—Interior of Aviary No. 3 (as first put up, before let-out cages, etc., were added).

Photographs by Dr. C. Gouldesborough.

working of the well, such as the pipes getting stopped up, it is so much easier to open it out if a stone covers the top.

In my own case the soil is very sandy and the water drains quickly, and so a dumb well answers admirably, but I do not know how it might answer where the soil was clay and heavy. It is very seldom on a light soil that a dumb well has to be opened, so it is neither an eyesore nor an inconvenience.



No 2 AVIARY

Be sure and have your pipes leading into it large enough; mine, in this aviary I am describing, were laid too small. The water from the fountains does not run fast enough to flush them, and now and then they get choked with sand and husks from the aviary floor and have to be cleaned out. I daresay if the water were turned on at its full pressure the pipes would keep all right, but as we use the town water, and pay for every gallon in the garden that is consumed, the too liberal use of it is a consideration.

The boiler in this aviary is under one corner of the floor in the larger half. It has had to be renewed once in ten years, possibly the boiler might have lasted longer, but it was cracked and leaked, and in consequence of this the water supply tank had to be more frequently filled up, and the result was a poor supply of heat. It seemed therefore the cheapest economy to have a new boiler altogether. The heat from it not only well warms the pipes, but heats the tiled floor directly above it, and I find the delicate birds have soon found this out, and in the winter time sit on this part of the floor to warm themselves.

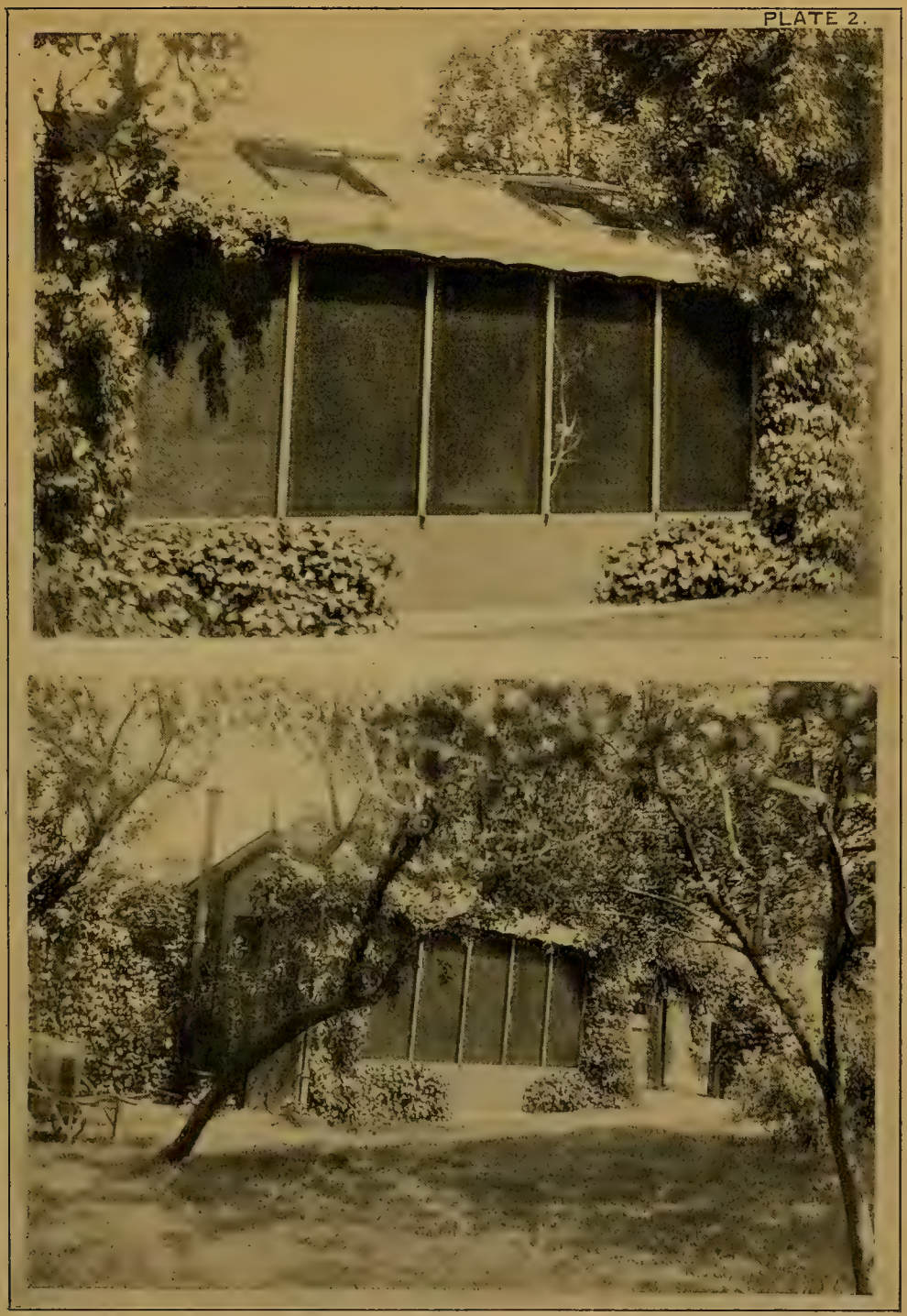
The little stoke-hole that supplies the fire for the boiler is outside at one end of the aviary, and is sunk below the aviary level some three or four steps, a pent roof of galvanised iron keeps the rain from the outside of the grate. The fire (if stoked properly) after being mended late in the afternoon should last all night and well into the next morning.

Both for this aviary, and another one I will describe later, I burn a small coke (about the size of a large walnut). It is very smokeless and gives a great heat, but at the same time it is expensive. However, as we have neighbours' gardens on each side of us it is almost a necessity to have a smokeless fuel, as on no account would I wish my birds to be an annoyance to anyone.

When I first put up this aviary I had the floor sodded. It looked very pretty, and the birds loved the grass, but I soon found it unpractical, for it was impossible to keep it clean and wholesome, so I substituted grey tiles, and these are much more sanitary. They are well sprinkled with *red* sand, and this does not seem to harm the birds in any way, though I have heard it is not good for them. No doubt river sand would be better, but this would considerably add to my many expenses, which already are quite sufficient.

The hot water pipes were put in this aviary some time after it had been built. The first year I heated it with an oil stove in one of the porches. All went well for some time, but one night the lamp went wrong, and next morning—(New Year's Day, of all days in the year)—I found half my birds dead on the floor. The inside of the aviary was covered with black soot, and the surviving birds a pitiful sight, dirty and terrified. Anyone who has gone through an experience like this will understand how disheartened I felt. I would almost have been thankful to anyone who would have taken the aviary and birds out of my sight for ever.

Many of the victims were old favourites I had had for years, and it was sad work collecting the little still bodies, so full of life only a few hours.



No. 2 Aviary (with shutters down).

Photographs by Dr. C. Gouldesborough.

before. But to sit down and do nothing but cry would only have made matters worse, so although it was Sunday I set to and cleaned the aviary down, and I am sure felt better for it, for in *all* troubles *work* of some kind is a splendid helper, even though it may be done with faltering steps and eyes that can hardly see for tears.

The lamp was banished, though I expect the accident was due to my own mismanagement, still I wanted to be on the safe side, and for the remainder of that winter and the next I had no artificial heat. But these winters were mild, and I could not expect this every year, so in the autumn of 1899 I had a boiler and pipes put in.

I feared at first that the birds might sit on the pipes and weaken their legs, so I had some wire guards made to fit over them, but I removed the guards, for I found it very difficult to keep them clean, and, further, if a tiny bird got underneath them (and it was impossible to make them fit quite closely at the bends) it would probably graze its forehead in its frightened attempt to get out again.

I have an arrangement for seed pots in this aviary that is rather handy. A long shelf of wood is fixed, with iron brackets, to the aviary wall, about a foot from the ground. In this shelf, at intervals, are cut large circular holes, and the food pots rest in these holes, and are so on a level with the shelf. Of course, the pots must not be straight all the way up or they would fall through. The hole must be cut a little smaller than the circumference of the rim of the pot. Soup plates at 2½d. each in plain white look nice, or the ordinary red flower-pot saucers would do. My own pots were made purposely and are much like a soup plate, but deeper, and with a flanged edge inside to keep the seed from being wasted.

There are just two other points to notice about this aviary before I pass on to the next. One is the advisability of having the floor to slope a little at one corner, and a very small mesh wire grating inserted in the aviary wall, so that when the floor is well swilled out now and then, the water has a means of escaping. The other point is the usefulness of let-out cages in the aviary walls. It is true it makes the shape of the exterior somewhat irregular, but it is of very great value to have one or two good cages getting the heat, and yet not taking up any of the floor-room. When first I put up this aviary it had no let-out cages, but a large cage used to hang inside (against the brick wall at the back) in the larger half. It was a cage after the box pattern, that is wired only in front, the other three sides being of wood, and though very handy yet it seemed to take up much space that could ill be spared. Then the thought struck me, why not cut a piece out of the aviary end and insert this cage, so that though it will not be in the way (the cage projecting *outside* the aviary) yet it will still seem to be part of the building and will get the warmth.

I found the plan answer so well that besides this cage I had two others let out in the aviary ends, so now I have three very large cages in this aviary, besides the aviary itself. They are a portion of it, but in no sense in the way, or taking up floor room; each cage can be divided at will into two, so that I really can make six altogether. I find them so useful, and they are always more or less occupied, either for breeding purposes, or supposing you find two birds have fought, it is so easy just to separate them by putting one or other into a cage close at hand.

Again, I had a pair of Barraband parrakeets loose in the larger half of the aviary, and the hen turned fierce and murdered a little hen picui dove, so feeling it was unsafe to have her at large I put her into one of these large cages, and a perch being arranged to come right up to its wire front, the cock (who was devotedly attached to his mate) could come and sit close by her cage and talk to her through the wires. He passed nearly all his time in this way, and thus the poor bird, whom of necessity we had to imprison, had a happier time than she would have had if I had had no let-out cage to put her in, for it was very large and she really had a fair amount of liberty without being able to do any hurt to the other birds.

A little sliding door in the division between the two halves of the aviary is very useful in passing birds from one part to the other, as it saves the trouble of carrying a caught bird round through the doors.

From this brief description I think you will be able to picture a little what this aviary is like. It cost a good deal to build, and here let me give a word of advice to would-be builders of aviaries. In the first place make up your mind at the very first what you *really* want, plan out carefully and clearly in your mind (and also on paper) every detail and measurement of your proposed structure. I failed to do this properly, though it is true I planned my aviary out roughly, but I kept thinking of fresh improvements *during* the building, when I ought to have settled everything *beforehand*, and this adding on, and adding on, of alterations is very disastrous to one's pocket, though perhaps they may be put down as costing little or nothing at the time.

So I would say, think out every detail, explain all to your builder, get an estimate from him and then you know where you are, and have some idea of what it will all cost you. And having got your

Photograph by Mr. Emblin.

No. 3 Aviary (front view).

men started, be your own Clerk of the Works, be constantly about to see they are carrying out your directions in *your* way, and think nothing of climbing up ladders to inspect those portions not seen from below. If you fail to do this you must not be surprised at all sorts of drawbacks cropping up. For instance, in both the aviaries I have already described the gutter along the back is far too narrow. In the one aviary there is a risk of smashing the glass roof when the gutter is cleaned, because, between the wall and glass roof, the gutter is not wide enough to allow a man to tread along it easily, and in the other aviary (the last I have described) the gutter was so narrow that in a heavy storm it could not take the water fast enough, with the result it overflowed and came through the back of the aviary, running down the wall and making the tiled sanded floor most unpleasant. This I have since had remedied.

When I built the aviary I am now going to tell you of I was wiser, I had bought my experience dearly, so I thought and planned out how I should like it, and then had the builder, Mr. Walker, of Sheffield, over to see me, and had a talk with him and gathered an estimate as to what it would cost. Mr. Walker (who is a wood and iron structure builder on a large scale) was very interested in my building and made some excellent suggestions as to ventilation, etc. The aviary was built at Sheffield in sections and just put together with bolts and screws on arriving here.

This (No. 3) aviary is a long way my favourite of them all. It was put up in the spring of 1901, and was at first intended for parrakeets. The best site I could find in our old orchard was 32 ft. × 22 ft., the longest side facing south. It is a pretty situation, with a tiny artificial streamlet running in front where many water-lilies and iris grow. Overshadowing the eastern end is a picturesque old spreading apple-tree with a seat running round its trunk.

From my width of 22 ft. I cut off 6 ft. (on the north side) to form a passage running along the whole length of the aviary, and from each end of this I took off 6½ ft. That at the eastern end forms the entrance to the aviary and is fitted with shelves, etc., into a little store-room, while that at the western end forms a small extra division for birds. The centre part of the passage contains the stove for heating the place, and is invaluable in many ways that I will mention later.

This left me with a piece of ground 32 ft. × 16 ft., and this I divided into 5 divisions, each 16 ft. long by 6½ ft. wide (the centre one is just a trifle smaller than the others). Each of these compartments forms a separate aviary to itself, and is divided into three parts, namely, a shelter, glass-roofed portion and open flight. The three centre compartments are entered by separate doors from the passage, the two outer ones by doors from the seed room, and from the little extra aviary at the western end.

In this way there is no fear of the birds escaping, and also one need not pass through all the aviaries to reach any special one, each having its own entrance. This is especially useful in the case of nesting birds, which must not be disturbed.

The little seed, or store, room is fitted with shelves for numerous articles, and a curtain of washing print hangs in front. There is also kept here a galvanised seed bin with five divisions. The centre one is very much the largest and holds two bushels of dove mixture (wheat, dari, hemp, and a little rice), the other divisions hold a bushel each of Italian millet, Indian millet, hemp, and canary. The brushes, water-can for filling the baths, etc., dust-pan and other articles for daily use are hung on nails on the walls, and behind the door is a rail for the aviary cloths, where they hang to dry. There is a window at one end, and directly underneath it a good-sized wooden shelf that makes a capital table, and screwed to one end of this is an "Enterprise" cutter (Spratt's) that has been used for years, and is as good as when I bought it. I find it most useful for grinding biscuit and egg-shells, and the size of the pieces may be regulated by means of a screw. There is nothing about it to get out of order, and where there is much grinding of food stuffs to do a machine of this kind is almost a necessity.

The passage is lighted by two windows, and between these stands the stove, the pipe of which goes through the roof. The stove is an ordinary closed one and has a little door at the bottom for raking out the ashes and another small door in the front top for poking the fire. But I find if the fire is poked through this door there is danger of cracking the fire brick lining (as the poker is obliged to be held slanting), so I had a lift-up door made in the flat top of the stove, and through this the fire can be stoked or poked in safety.

I burn the same coke in this as in my other aviary, and now and then in a close stove like this one the coke is given to "cake" and stick in a hard mass to the fire brick inside. If this were not regularly chipped off it would in time block up the interior of the stove, but it needs doing carefully so that the fire brick is not injured with the poker, and cracked or chipped.

I find this stove very useful in times of sickness, for a bird may be placed near it at night and be kept warm till morning, or sometimes in a case of collapse hot pieces of flannel are needed, and while the little invalid is wrapped in one piece

No. 3 Aviary (back view).

Photograph by Mr. Emblin.

another can be heating on the stove, and so a continual supply of warmth be kept up. Another advantage is that the heat keeps my food stuffs dry and wholesome, for a wooden building is not the best of keeping places in winter, and as I also keep my dogs' food in sacks in the aviary passage it is very important it is free from damp.

There are shelves covered with a curtain in the passage as well as in the seed room; and a broad shelf high up right across one end. All spare perches, cloths, heather for nesting, nesting tins, etc., are kept on these, and hooks are screwed into the roof for spare cages to hang from. A writing-desk, fixed on an iron bracket stands under one window, and here I keep my collection of feathers and the medals my birds have won for me at different times, also the large printed labels for putting on the boxes of birds going away. There are so many things one needs in an aviary, and, if possible, each should have its own particular place where it can always be found.

When first I built this aviary, with the exception of one let-out cage, all cages in the passage had to stand on the floor or hang from the roof, and I soon found this very inconvenient, so I adopted the same plan as I had done in No. 2 aviary, and let out some more cages in the walls. On the north side my little flying squirrels have three large cages opening into each other by sliding doors, that can be worked from the outside. Below one of these again is a spare cage, and underneath another is a large cupboard I use for storing sand. At the western end of the passage is another cage (let out into the little aviary at the end) where lives my white Chipping squirrel, "Anthony," and on the other side of the passage are two more very large cages (let out into the shelters of Divisions 2 and 3), below these two last are store places—as I did not care to bring the cages right down to the floor—each large enough to hold several sacks of food.

In one I keep my dogs' biscuits, in the other bags of acorns, beech and other nuts for the squirrels. Besides my American Flying squirrels and the Chipping squirrel I have two Tasmanian phalangers, or Sugar Squirrels, and most of these live in the passage cages. The fronts of all the cages (but one) face the passage, and look rather nice, besides, as most of them have glass (wired) windows let into them, they make the passage much lighter than it would otherwise be without them.

The five doors opening into the front divisions are all of wood and wire, three open into the passage, and those at the extreme ends into the seed room and little extra aviary. As I have already told you the first portion of these divisions consists of a shelter; these shelters are a good height, for they come under the centre of the roof, and here the aviary is 11 ft. high, whereas it slopes down to 6½ ft. at the ridge. The shelters have each a window. In the three centre ones this window is in the front part, in the two outer ones at the ends. The shelters have wood and wire doors leading into the flights, and fitting on to the wire centre of each door is a moveable wooden shutter, these come in very useful for a purpose I will tell you of later.

These doors are open, being latched back to the walls, and are very seldom closed. Below the window in each of the three centre divisions are pigeon-hole openings with a shelf on each side of them; on the inner side this shelf hinges up, forming a door in front of the pigeon-hole, and completely closing it when not required. In the two end divisions the pigeon-hole is not under the window, but is placed in the front looking out on to the flight.

The chief use of these pigeon-holes was intended to be that in winter the doors between the flights and shelters would be shut (making the latter portion very warm), and yet the birds could still pass in and out at will. I have found, however, that the birds care little for the shelters and often choose to roost outside, so the connecting doors between flight and shelter are kept open all the year round.

We now come to the flights. The first portion is under a sloping glass roof, lined with wire netting for fear the glass might be broken at any time and the birds escape. This glass roof is rather over 5 ft. wide and is made of ground glass. In spite of this I found that in summer it got so hot that I was obliged to stretch an awning over it (as will be seen in the photograph) on the outside, for the birds seemed to find the heat very oppressive, especially when a nest was built directly under the glass. In the winter I move this canvas down from the glass roof on to the open wire roof, that forms the rest of the flight, for it keeps out much of the snow and rain and helps to keep the birds warm in the very cold weather. Wherever this canvas is, either on the glass roof or the flat wired top, it is always stretched tight and nailed well down to the woodwork.

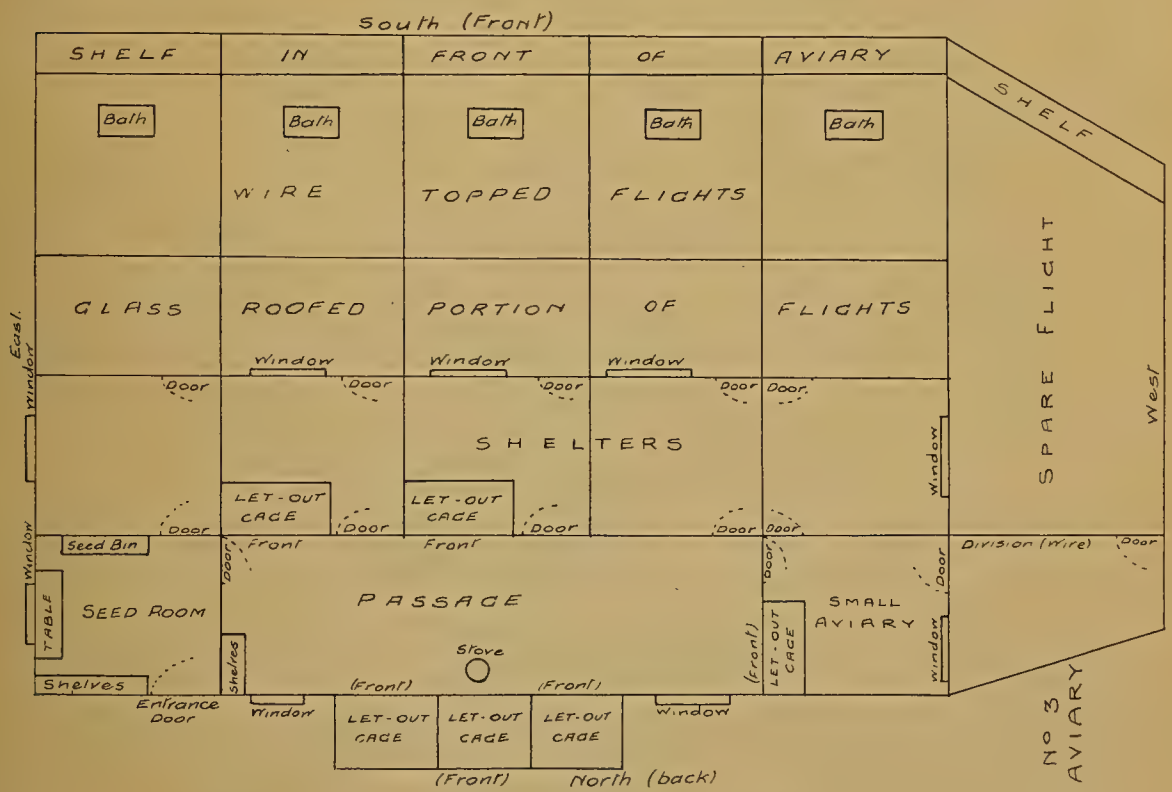
The part of the flights that is just open wood and wire is the last portion of each division to describe. The wire netting all through is half-inch. The front of the aviary (as shown in the picture) is wire to within 1½ feet from the ground. At the ends the woodwork is brought one foot higher. I used to have these ends open, but now they are boarded up in the portion by the glass roof, and covered with canvas in the part by the flights. The divisions between the aviary com-

partments are of wire to within 2½ ft. boarded from the ground.

The roof of the aviary is of corrugated iron lined with wood—metal alone would be too hot—and is fitted with spouting back and front. The back spout is of metal, the front, running the whole length just below the glass roof, is of wood, with metal pipes at each end to bring the water to the ground.

flights are fixed brown earthenware glazed baths (such as are used in cottages for sinks), 24 inches × 16 inches and 3 inches deep. I found it would have been better if I could have got them shallower —though they are only half filled with water —but even 3 inches is a deep step to a bird whose wings are heavy and useless with water.

To remedy this I cemented some small steps, made of common grey tiles, in each bath, and the



Along the whole length of the inside of the front, by the wooden rail half way up, is a broad shelf, and this the birds love to walk up and down on, or to lie in the sun, basking with outstretched wings.

The floor in the passage, shelters, and under the glass-roofed part of the flights is thickly cemented. The open part of the flights was at first grassed (with wire laid underneath), but I found it impossible to keep the grass clean, so now I have fine sifted ashes beaten down on to the ground instead, and under each perch in this open part is put a large flat slate. These slates are easily lifted up, washed, and replaced—and so the aviary is kept sweet and clean. In the centre of each of the open

birds soon learnt to use them without fear. These baths are brushed out and partially filled with water every day; they are fitted with a plug and a waste pipe running the whole length of the aviary, which carries off the dirty water into a dumb well. The passage and small aviary are also each fitted with a bath and waste pipe.

The outside of the aviary is painted dark green, with the windows, etc., a very pale shade of the same colour, the inside (partly paint and partly white-wash) is cream, faced with the same pale green, a combination which is very cool and clean-looking. The windows, at the suggestion of the builder, Mr. Walker, are made in the same way as in hunters' stables, the top sash pulling forward

so that there is no down draught. The part that opens is protected with wire to prevent any bird escaping; of course, this applies only to the *outside* windows, those between the shelters and flights need no wire guard.

I fear this account is perhaps a too detailed one, but I have mentioned the particulars fully in the hope they may contain some useful hints to anyone who is thinking of building an aviary. And now as to the cost. I got three estimates from different firms, and decided on giving the order to Mr. Walker, of Meersbrook Bank Works, Sheffield. He had done work for me before and it had worn well. Mr. Walker came over from Sheffield, and we talked things over, and I found him most obliging and ready with suggestions, telling me clearly the advantages, or the reverse, of each point under discussion. He strongly advocated a wooden lining to the roof, and I am very glad I did not follow my first idea, which was to have it of metal only. The estimate for the actual framework was £46 5s. 0d., but there were several improvements added to the original plan, and this sum did not include the cost of painting, brick foundations, levelling and cement floor, and the waste pipes and bath arrangements, all of which latter items were done by local workmen.

The aviary was made in large sections at Sheffield, and took only a few days to erect, the rough cement floor, brick foundations, baths, pipes, etc., being put down first. After the aviary was put up the final smooth layer of cement was added, and also a narrow border of cement was put round the inside edge of the open flights as a precaution against vermin, wire also being laid underneath this portion. The brick foundation the aviary was built on was a loose one, but owing to the unevenness of the ground the western end had to be raised to a higher level to make the building straight.

The principal items in the cost of the aviary were as follows :—

	£	s.	d.
Original estimate for aviary	46	5	0
Wood lining to roof	6	10	0
Glass roof & netting lining to same ...	5	4	6
Shelves for seed room & some cages ...	1	8	6
Spouting	2	0	0
Baths 7, one in each of the five divisions & 1 each in the passage & small aviary	2	4	6
Fixing baths and making two dumb wells	5	18	9
Lead waste pipe	2	5	0
Painting aviary	10	2	9
Levelling, bricks, &c.	1	8	6
Cementing floor	12	2	0
Total	95	9	6

I should explain that the second dumb well was made to carry off the water from the spouting on the north side, and also partly for the advantage of my old aviary (No. 2) that I have previously described. The original dumb well for this latter aviary was only small, so now a connecting pipe from it leads into this larger well made for the newer aviary.

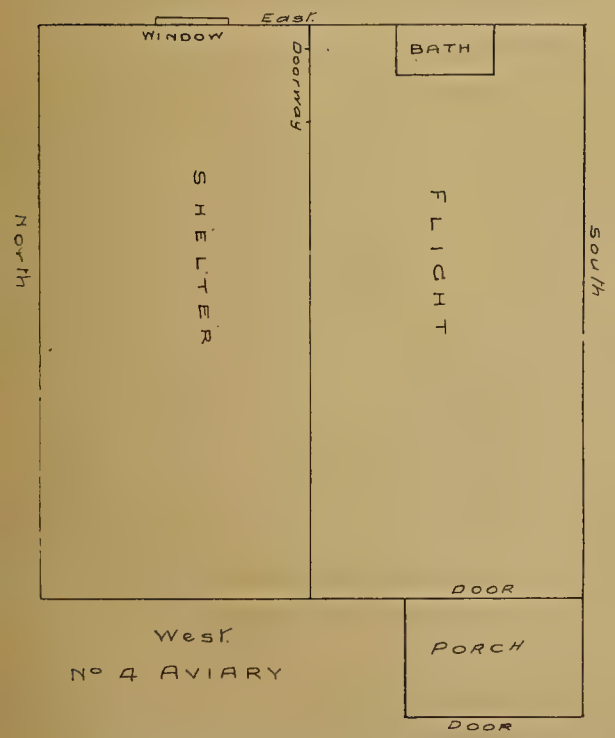
The No. 2 aviary cost me nearly £70, but I consider the newer one, No. 3, is far the nicer, besides being so much larger. I was more experienced, and I hope more business-like, when I built this last aviary, but it is only when an aviary is really *put up* that one sees clearly all its advantages and disadvantages, things look so different in reality to what they do on paper, and one's ideas expand as you go on. I am not likely ever to build another aviary in our garden-orchard; indeed, I have promised that I will not encroach on the rights of the flowers any further, but if ever I could afford the space—and money—to put up a new home for my birds, I would make improvements on my last building, alterations that, now I have really kept birds in it, I can see would be beneficial.

I ought to tell you that this No. 3 aviary has had a wire flight built on to the western end some few years ago. This flight is divided into two parts (with a communicating door). One portion acts as a small flight to the little aviary I spoke of at one end of the passage, and the other part is used to put just a few birds in, its present occupants being a pair each of Cockatiels, Black-bearded Doves, and two Violet Doves. The first-named have reared three young this year ('10), and the hen is now laying again. A sturdy apple tree grows in this flight. The floor is not cemented, nor even underlaid with wire, but is just earth, and, in the smaller half, beaten-down ashes. The larger half has no proper shelter, so possibly I may take all the birds out of it when the summer is over.

No. 4 aviary is only a very ordinary type, and therefore there is little to say of it. Perhaps I should have mentioned it before No. 3, for it is the older building. It consists of a shelter, flight, and double door. The front of the shelter is wire, with two wooden shutters to cover it in winter. It has a boarded floor, a little window at one end, and a doorway into the flight. The flight is just wood and wire, with a wood and wire porch and double doors. There is a bath in the flight connected with a dumb well, and the soil floor is underlaid, as is also the shelter, with very close wire netting to keep out rats. The shelter is rather more than 8 ft. long by 5 ft. 10 inches wide. The flight is the same size, exclusive of the porch and double doors. Both this aviary and also Nos. 2

and 3 are covered over with creepers, chiefly roses and different kinds of ivies, adding much to the improvement of the look of the wooden buildings, which, left bare, would appear rather unsightly.

And now, having described all my birds' dwellings—save some little runs at present occupied by a pair of Algerian Partridges and a Tasmanian Squirrel—I will just add one or two more details. I have told you that the fronts of No. 1 and No. 3 aviaries are open wire netting (No. 2 has glass shutters in front). To prevent the birds being frightened by cats at night, and also to keep out the cold in winter, I have arranged curtains to stretch across the fronts of both these aviaries. The curtains are made of a wide, strong material, such as Bolton sheeting; this is of a sufficient width not to require more than one



breadth (and so avoid any join). Rings are stitched along the top, and run on a tight wire securely fastened at each end of the aviary, while one end of the curtain is nailed to the end post of the aviary, and the other end is ringed to fasten on to small hooks placed to keep the curtain stretched tight.

In the day-time the curtain is just drawn back to the secured end, and tied back by a piece of stout twine, nailed there for the purpose. On misty days, or if it is very cold, the curtain is kept drawn. There are, however, two things you must remember: first, do not *tie* your curtain back after it is soaked with rain; draw it, but just leave it to hang loose and dry. If you tie it in it will rot and soon wear out. The other point is that if your aviary is a long one, as in mine, 32 ft., you will find the weight of the curtain when stretched out will bend your wire in the middle, and cause it to drop a little. To avoid this, put L-shaped screw hooks along your aviary top beam, and just lift the wire over this when you have drawn the curtain, of course unhooking the curtain before you draw it back in the morning.

In No. 1 aviary the curtain is run on an iron rod, not wire, and is divided into two halves (being strapped back in the middle and hooked at each outer end), but where you have a length so long as 32 ft., and desire your curtain in one piece, it is obvious you must have wire, for an iron bar could not very well be got long enough.

I have now told you about my aviaries, so shall pass on to the care of their inmates, their ordinary life, and how to treat them when nesting, in sickness, and when packing them to send away to new homes. There are many little details which only can be learnt gradually if you have no one to help you, and I hope you may find the reading of them useful, both to you and to your birds.

First as to your doves'

ORDINARY LIFE.

I feed my doves on a mixture of wheat, dari, and a lesser proportion of hemp, white millet, and a little rice. This is their diet year in and year out. I have fed my doves on this mixture for years, and find they thrive very well on it, for I very seldom lose an adult bird, and some I have had for very many years. This "Dove Mixture" I get ready mixed by the bushel from our corn merchant, having told him the proportions; he charges sometimes more, sometimes less, according to the prices of the seeds. I get two bushels at a time, and the price for this quantity may be 10/9 up to 12/-. It is kept in the centre division of the corn bin in the little seed room. I should mention that I add the white millet to the "mixture" myself; it is a seed I do not find the doves much care for, and in the nesting season, *when young ones are being fed,* I give rather more hemp. On one of the shelves in the seed room stand three large-size biscuit tins to hold the supply of mixed seed for the different kinds of birds, namely, parrots, doves, and tiny waxbills and finches, and these tins I fill up from the bin, mixing the seeds myself as they are emptied. I do

BLACK-BEARDED DOVES.

not give each seed in separate vessels. There may be rather more waste giving it mixed, but I do not think a bird is so apt to eat more than it should of one kind of seed if it has to be at the trouble of picking that particular seed out.

Then, in addition to the seed, I give the birds now and then ground biscuit, this being ground up in my "Enterprise" cutter (Spratt's), and afterwards sifted. You will find, though you can regulate the size cut by the screw, that it is impossible to cut such a substance as biscuit *clean*. There will always be a certain amount of dust and smaller pieces, but none of this need be wasted. It can be sifted again in a smaller-holed sifter, and again in a smaller still, and this will now give you three sizes of biscuit, the largest for the doves, the smaller size for your tiny birds, the dust for mixing with your soft food, being much more preferable for this purpose, in my opinion, than grated carrot.

The biscuit I purchase from Messrs. Lipton, getting a case of, say, ½ cwt. at a time. This will last you for long, and keep well in the wooden box it comes in. The kind I am using now is the "Daisy" biscuit (9/- for a 36 lb. case), before I have used the "President" and "Pan Lunch," but these two kinds have gone up in price. The doves have always a lump of rock salt in a pot in each aviary, and the egg shells are saved in the kitchen, well dried by being placed in a tin cullinder on the kitchen range, and then ground up in the cutter and given to the birds.

It is no use trying to grind the shells before they are well dry, and it is no trouble to the cook to put them in the cullinder, nor for you to empty it every few days. I look on this grit made from eggshells as most important to birds, especially for the hens about to lay. When you know your birds are nesting always remember to scatter plenty of this grit on the floor, and the laying of firm-shelled eggs should be your reward.

Another item in my doves' diet is cut up Monkey Nuts, or, as some people call them, pea nuts. I found this out by accident. I was shelling some nuts as I stood in the aviary, for some of my members of the Parrot tribe, and the bits of nut were picked up and eaten with evident relish by a Violet Dove. But pea nuts are tedious things to shell by hand, and when shelled are awkward and slippery to cut with a knife. This difficulty, however, has been got over. Mr. J. J. Armitage (of the firm of Messrs. Armitage, 27, Castle Gate, Nottingham, who are large seed merchants) came to my rescue. He can shell and cut up the nuts for me by machinery, making the pieces any size I like, the price of the nuts being 4/- a stone, shelled and cut. Mr. Armitage has been a very good friend to both my birds and myself, and we owe him our very grateful thanks for many kindnesses; he has always been so interested in my birds, and in thinking out anything that may conduce to their comfort. I do not know if the oil that is in the nut might affect a bird's plumage and give it a glossy look, but my birds certainly look very "tight" in feather, and it is very seldom that they ail anything.

I am sure doves need other food besides dry seeds. Bleeding Hearts are fond of mealworms, and I have found them also delight in "soft" food. This I get from Mr. Armitage at 8d. lb., and very excellent it is. I mix it with the ground biscuit, about half of each. In No. 2 aviary, which is at present rather mixed as to its inhabitants, a pot of this soft food was put daily for a Blue-cheeked Barbet that I had for some years. I soon found other birds besides the Barbet helped themselves to it and flourished. One was my cock Barraband parrakeet, and others were the Bleeding Hearts. It certainly seemed to suit them, and I have no doubt that others of my doves who also get it are improved by it too, for in so many notes on the wild life of doves we read of their subsisting on berries, so that more than a dry seed diet seems needed, and the soft food apparently is an excellent substitute.

I have spoken in the notes following on the Bronze-wings of their fondness for Wineberries,

DWARF TURTLE AND BRUSH BRONZE-WING.

and my Black-bearded doves, especially the hen, delights in red currants, plucked off the stem. I have noticed that when she picked one up she did not swallow it at once, but jerked it with her beak against the ground first, like a thrush with a worm.

It is rather a disputed question where the seed pots should be put in an aviary. If on the floor there is a fear of mice, or, worse still, rats. I remember, years ago, when as children we kept four Nun pigeons, how a rat got into the aviary, and gnawed the poor birds' toe nails off, but, strangely enough, did not kill them. Finally this rat came to a curious end. We found it fast in the wire netting (which was larger than ½ inch mesh). By some means it had got its head through and so entangled itself it could not get

Crested Senegal and White-winged Doves.

free again. Rats can even get through a tiled floor, burrowing under a tile and causing it to sink. Once I heard of a rat doing this in a dwelling-house, and making a sort of nest in the cavity, lining it comfortably with some small children's socks it had stolen. Rats are said to always come where there is grain, but so far we have not suffered from them, though one or two mice have been caught, chiefly in the passage and seed-room. In the solitary instance when the rat came after the pigeons, I think it was partially due to the pulling down of some very old buildings close by, and so the rats got disturbed and were obliged to seek new quarters.

If you have a suspicion that mice are about, I know of no better plan than to get a small wooden box, and inside it place an "Out o' Sight" spring mouse-trap, costing 2d. This you should nail down to the bottom of the box to prevent it shifting, then cut a small hole large enough for a mouse to enter at one end of the box, and set your trap, baiting it with strong cheese. In this way there is no fear in setting the trap that the doves will get caught in it, for if it were set with no protection the doves would be certain to peck the cheese, and would as certainly get caught by the beak, and either break it or die from shock and suffocation. I once had a favourite little wild robin that we had tamed who got killed in this way. He was only in the trap about a minute, but he was caught by the beak and quite dead when I found him. Of course, this plan of putting the trap in a box would not be safe to try where there were any birds small enough to go through the entrance hole.

Every year, and sometimes twice a year, I get a good load of Scotch Fir branches to fasten up in the aviaries for cover. I have tried other firs, but none keep the "needles" on save the Scotch. I pay 10s. a load for them, carting and delivery free. I am fortunate in living in a very wooded country, but if you are not I would advise the use of pea rods stretched flat across the corners of the shelter. Gorse I do not care for, the spines are dangerous. Bracken may be used, and the undergrowth when a wood is cleared out. As cleanliness is most important in an aviary, I prefer to renew the cover every year.

In some aviaries bushes are planted in the flights or grown in pots, and if this is done in an open part of the aviary where there is rain to wash the cover and keep it clean it may be satisfactory, but our English summers are too uncertain to rear young birds out in the open. I never fasten up any branches or nest pans save where the nesting birds would have a roof over their heads, for I am sure the young birds should be kept dry if they are to be kept healthy.

The fir branches generally want a little trimming with a cutter before they are fastened up with nails and wire to the aviary walls, for a long length of bare branch is of no use to you, and only makes a greater weight for the nails to carry. The nails should be strong and large-headed, so that the wire does not slip over the head. Quite short lengths of pliable wire will do, just long enough to go once or twice round the branch and round the nail; then twist the ends of the wire together and nip them off close and hammer them flat against the branch, so that the birds do not catch on them. The branches are fastened some feet from the ground, so as to give more floor room, and also to prevent mice running up them, and are placed in an upright position as if they were growing. If a branch is very heavy it should be wired in several places. It is really better to have

PLUMED GROUND DOVE.

two people to do this work, for besides one holding up the branch whilst the other wires, it is so much easier for the person *not* on the steps to judge of the effect from below, as to whether a branch is in a good position; sometimes two or three places must be tried before the best is really settled on.

In addition to the branches, I have numerous perches fixed in the aviary, by simply boring holes in the woodwork and knocking the perches firmly in with a hammer. Where the woodwork is not deep enough for a hole, it is easy to screw a block of wood on to the woodwork and make your hole in the block. A very good perch is an unvarnished broom handle (costing 2d.) cut up into three short or two longer lengths, one end being slightly pared where it is to be knocked into the wood, as a perch with a slanting end drives "home" so much better into the woodwork than if the hole and perch were exactly the same size. These broom handles seem just the right size for doves' feet—except for the very tiny varieties, when a slight bamboo stick might be used, but it would have the drawback of being rather cold to the birds' feet.

Every dove has its own particular roosting-place, and this must not be invaded by any other bird, so when you get a fresh arrival be very careful not to introduce it straight off to the others towards evening.

The best and wisest plan is really to keep the newcomer in a cage for the night, with a few drops of Syrup of Phosphate of Iron in its drinking water, and then, next day, when it is thoroughly rested, to turn it in with your other birds, early in the day. You must keep a very careful look out, going down to the aviary oftener than usual, to see if your birds are agreeing together, for if there is going to be any fighting it will probably begin at once. If you find the birds inclined to attack each other, take the newcomer away. It is hopeless to try to make birds agree when once they have decided to be enemies.

Your "spring cleaning" in the aviary and the fixing of your branches should all be complete by the beginning of March. Probably you will find your birds—or some of them—will want to start nesting in February, but such haste should be severely discouraged. You will now have to decide how many birds you can place in each aviary, and which birds will be friendly with others. Take this as one of your best mottoes: "Never overcrowd." It is very tempting to do this; one keeps thinking the aviary will hold "just one pair more," and studying the different bird sale lists only makes the temptation stronger. At one time I got the bird-buying fever so badly that at last I had to resolutely pass over the sale column for fear I should succumb. All the same, if you are strong-minded enough to be able to read and *not* to purchase, by all means study the lists every week—it will teach you the value of birds, and how the prices vary according to the seasons when certain birds are shipped, and so you may judge when it is the wisest and also the cheapest time to purchase.

Having told you something of my doves' every-day life, I will now tell you something about their nesting.

CHAPTER II.

NESTING.

THE aviculturalist who loves his (or her) birds looks forward very much to the bright days of spring and summer, when the winter is a thing of the past and the nesting season has come. I always feel, however badly my birds have done one year, the next may be a better one, for should not every year bring more experience, and experience more chance of success? And so I start again with renewed hope.

It is important, first of all, that you start with your aviary clean—the paint washed, the white-wash renewed, if needed. You will have little

CRESTED DOVE.

Photo: Mr. H. Willford.

chance to do this later on without disturbing the birds, and your places should at any rate *start* free from insects and dirt. So I would advise you to clean down early, and after you have done this

fix your branches, and have all ready for the little housekeepers to start their summer homes by the beginning of March, for doves begin nesting very early. Having fixed your branches, your next work is to tie up your nesting pans. Doves are noted for their frail and careless nests; sometimes the eggs can even be seen from below, so lightly have the twigs been arranged, so if your young birds are to be secure from falling out it is best to put some receptacle for the birds to build in.

I have read a pretty old legend of how, long ago, the Sphinx called all the birds together to come and have a lesson on how to build a nest. The audience duly assembled, but the dove flew away almost at the beginning of the lecture, quite satisfied that she had learnt all there was to learn, and, one by one, at later intervals, the other birds followed her bad example, till only one bird was left, the little swallow, who stayed till the very last word. Now you see why the dove builds such a very poor nest, and the swallow (because it learnt the lesson properly) the most perfect nest of all, for it learnt what none of the others did—to make a roof over its little home and to make it weather-proof.

At one time I used to make my nest baskets myself of wicker; they are very easy to make, but I have discarded them now for pans made of zinc. I get these made at our local ironmonger's, and the price is 6d. to 9d. according to the size. They are round, the bottom just a little concave. The rim is some 1½ inches deep, and slants rather outwards. Round it at intervals are holes punched (to pass string through when tying the nests to the branches) in pairs, about an inch between. About five pairs of holes are in each pan. The edge of the brim is rolled over wire so that it is not sharp or cutting. If any reader cares to get these nest pans, they can be obtained from Messrs. Shaw, ironmongers, Bridge Street, Worksop, but it would be as well to mention they are to be like those Messrs. Shaw make for myself, and also to state the size required. A useful size is 7½ inches across from rim to rim; for very large pigeons they would be better 9 inches.

To each pair of birds allow two nests. The reason for this is that the parents will probably begin to want to nest again before the first young ones are ready to leave the nest, and, if they have nowhere else to go to, they may compel the young ones to leave their nursery before they are really old enough, whereas if a second nest-pan is provided the eggs will probably be laid in it, and the non-sitting parent (the cock sits in the day-time, the hen at night) will look after the nestlings. For if your first motto in keeping doves is "Do not over-crowd," your second should be: *Keep your young ones in the nest as long as you can.* They will be all the stronger for it; indeed, I do not know but that it would not pay in the end to take away the second clutch of eggs (if the old birds started again when the young were only about 10 days old) and put them under Barbary Doves as foster-parents, if possible, so as to allow all their attention to be given to the existing young birds.

An important point is how many nesting pairs to allow to each aviary? To really do well I do not think more than two pairs should be allowed in an aviary 16 ft. × 6 ft., for if one pair starts before the other it sometimes happens that you cannot remove your young birds when you would, because your second pair of birds are sitting, and you dare not risk disturbing them by doing any catching, so you must just watch your chance—it may be not for weeks—when you can remove your young ones safely. So that, though your aviary may look empty with only two pairs in at the beginning of the season, it is better than being too full, and you can leave your young ones in longer in consequence.

Possibly you have no spare place for your young birds, and you must keep them till they are nearly adult, and till quite the end of the season. If this is so, be sure and put rings on the legs of your old birds before the nesting begins, or you will be parting with an old bird in mistake for a young one, and this is a most vexing thing to do. In *"The Feathered World"* you will find plenty of rings advertised in the pigeon appliance column. The kind I get are made of some soft metal that can be pulled open, the two ends fitting V-shaped into each other when closed again on the bird's leg. These rings can be had stamped with the date of the year, and in different sizes. If I remember rightly, my own came from a Mr. Hughes, who probably still advertises them. It is easy to ring a dove yourself. Open the ring first and lay it by you, then catch your bird and hold it in your left hand firmly, with its back against your chest, then gently pull out the leg to be ringed with your right hand (keeping it extended between the first and second finger of your left hand), slip the ring round the ankle and close it with your free right hand. After a little practice you will find you can do it without any fuss or bother, but be sure and close your ring neatly so that the points do not overlap. It is well to have a fixed rule which leg you put the ring on where the sexes are much alike. I put it on the left leg of my hens, the right of the cocks.

Before you arrange your aviaries for the nesting season, think out carefully which birds to put together, as if you are to have any success your two pairs must be friendly to each other If you

are fortunate enough to have once made a good combination, make a note of it and keep to it, not only for the present season, but future ones. Don't run risks by introducing any birds unknown to the others, and especially *during* the nesting season. Trouble will be sure to follow. If your first arrangement is satisfactory, keep to it. I have in my first division a pair of Rufous Pigeons and Brush Bronze-wings. They are used to each other and nest without any interference on either side, but I am certain if I put in any other bird there would be trouble at once. Where you are anxious to have a good breeding season you *must* humour your birds; you cannot be too careful, for doves are very peculiar. They will even show you *where* they want to nest before carrying up a twig. It may be only a foot or so from where you have tied up your tempting nest-pan, but it is of no use, you may just as well take it down and refix it. Whenever I see one of my nesting birds squatting in a branch I know what it means. The bird is not perching in an ordinary way, but sitting motionless on the bough, in the same position as if sitting on eggs. Of course, I always take the little hint and alter the position of the nest-pan, putting it where the bird was squatting, and I find invariably the nest will be built there almost at once.

For nesting material I use dead heather. I find it clean and strong, and very suitable for the purpose. Often it can be used once or twice over, if put to soak in a bucket of water and well washed. I buy it from Mr. F. Hiscock, Blashford, Hants. He has supplied me with heather for years every spring, before the birds start nesting, for of course you must get it beforehand. I break it up into pieces about four or five inches long, and put a lining in the nest-pans to start the birds, and I also throw some on the floor. It is as well not to be too lavish with the heather, as sometimes I have known doves carry up such a pile as to have quite a pyramid in the nest, the top, of course, much smaller than the base, and this is fraught with danger to the young birds.

Only the other day a pair of Dwarf Turtles built a nest like this, and laid the eggs, which duly hatched. I feared to disturb them by interfering, but I felt sure something would go wrong. Every morning I used to get the steps and climb up to see if the nestlings were all right, for the nest was all to itself in the shelter, and no other birds came in, while the parents only seemed, after the first few days, to cover the young at night, so there was no fear of disturbing them. When the nestlings were some days old I one morning noticed one on the edge of the nest, and climbing up to see, I found the poor little thing had strayed an inch or two from the other, and (as it was very cold) the hen had probably brooded only the one in the centre of the nest, leaving the adventurous young bird all night uncovered.

Now if the nest had been built not nearly so high, but just to the level of the pan, and concave in shape, this would probably never have happened. The young birds were both blind, as all young doves are for the first few days of their existence, and so had no sense to get back to the centre of the nest. At first I feared the young one would die, for it was very cold, but after being held for some time in my warm hands it began to recover. Remember, *live* warmth is the best remedy possible for a bird suffering from collapse from cold; it brings back the vitality better than anything.

It is a most curious sensation to feel the life gradually coming back in a nearly dead bird, the heart beginning to beat very fitfully at first and then gradually calmer and more regular. Sometimes, in extreme cases and in very cold weather you will need other remedies too, but I will tell you more of these when I treat later on of sick birds. Having revived the bird, I then turned my attention to the nest, and pulled away quite two-thirds of the heather, being careful to do it from the underneath part, not from the top, lest the old birds should desert the nest, for it *is* a risk to interfere with a nest, however carefully you may do it.

Having made the heather lining as concave as I could, I put back the young birds, who, of course, had been taken out during the re-arrangement, and they settled down at once. The parents have not deserted them, and they have stayed where they *should stay*—in the middle of the nest-pan.

I have also known doves make a nest and lay eggs, then perhaps more heather has been put in the aviary for other nesting doves, and the birds have not been able to resist gathering it, and have piled it on *the top of the eggs*. I remember once in my early days finding about three sets of eggs piled under a huge stack of heather. I had been quite unaware as to what was going on, for my chief object in not going to inspect was the fear of frightening the birds from the nest.

It is usually the hen who makes the nest. She sits in the nest-pan and arranges all the pieces of heather the cock brings to her, tucking the pieces in with her beak. It is very amusing to see the cock choosing his material; he will pick up several pieces and throw each one down again before he is satisfied.

At this stage be sure and put down plenty of ground dried eggshell for the hen. If you have no cutter, do it with a rolling pin, it will crush it just as well. If you do this regularly your hens

should never be eggbound. I think I can only remember one hen in the many (of the larger varieties) I have kept that died of this, and in this single case the bird had a bad fall also, which no doubt made matters worse.

I can never be certain of my own doves how long they sit, for most of the nests are above my head, and it frightens the birds if one brings in steps or stools from which to observe at close quarters, so it is not worth while to run any risks. If you cannot tell the time you will at least know when the eggs are hatched, for the shell—broken in half—will be thrown out of the nest. A hatched shell that has held a living bird will have a reddish tinge (as of dried blood) inside. If you have two eggs, and both hatch, the second shell will be thrown out next day, often being found quite a distance from the nest.

If you could see the newly-hatched young ones you would think what ugly, helpless little things, for they are blind, and covered with cream hairy down, and the flesh and feet and legs look very dark-coloured. It is difficult to think, as one looks at the parent birds, that they, too, were once like their children; but perhaps more difficult still to understand how such a tiny thing as this empty egg-shell held this living bird, and how in such a cramped position it could live, and, further, have the power to burst its prison. If bird-keeping does nothing else for us, it at least teaches us how wonderful is our Creator, and how humble we feel before the Power that can *give Life*. We can take life away, but all the people in the world with their united strength could not *give* it, even to so helpless a thing as a baby dove.

As soon as ever you find the eggshells you must begin to try and protect the nestlings from accidents. There is always the chance they may fall from the nest, and if they fell on the hard floor it would mean death; so it is as well to put down a good bed of hay below the nest, and remember at this stage to go round your aviary oftener than usual to see all is well.

Both parents feed the young ones from the crop, the soft food forming whilst the birds are sitting. It is a pretty sight to see the greedy young ones being fed, when they get rather older and vigorous and eager for food. I have seen one of my old Barbary doves with a young one on each side of him, their beaks inside his, and he pumping up the food from his crop as fast as he can to satisfy the little tyrants. So attentive are the parents in some cases that I have known their beaks get quite sore with the continuous feeding of their young ones.

It will be a proud day for you when your first young dove leaves the nest. You will not probably see the descent, but will find a pretty, round-eyed little bird comfortably squatted on your hay bed. If you had not put down the hay you might have found a dead body, or a nestling with a broken leg or wing. Now that the hay has served its purpose it is better, after the second young one has come down, to take nearly all away. Leave just a handful, no more, in a corner of the shelter for the young birds to sit on, for they need a firm surface to walk on; a soft one only means weak legs. Like the strong, firm pads of a dog used to road exercise, so a young dove needs a hard floor if its legs are to be kept straight.

You are now at a very critical time in your young birds' life. If the parents will go on feeding them all will be well, but if they begin to nest again the chance of rearing the young ones is much lessened. I have sometimes thought it might not be a bad plan, after the young have left the nest, to cut down every nest-pan, even the old nursery, and take out every bit of building material, and so discourage the parents, if possible, from starting nesting again till the young ones were about a month old. It would perhaps mean less young ones being bred in a season, but they would be stronger birds. If one only kept one pair of nesting birds in each aviary this plan might be carried out, but where there are two pairs it would be very difficult, and would probably mean that your second pair of birds, if sitting at the time, would be disturbed.

Doves vary so very much in character. Some may be trusted to look after their young and a second clutch of eggs; with others, when you hear the old cock restarting to coo, you realise the young have a very poor chance of being reared, for neglect follows, and speedily death, the parents appearing to have lost all affection for the young ones, and caring only for the new eggs. Perhaps the better plan is to take either the cock or hen away (whichever seems the worst feeder of the young) on the very first suspicion, before the fresh eggs are laid. But here again you run the risk of disturbing any other sitting bird in the aviary if you start to do any catching.

When the young ones first come out of the nest I usually keep them in the shelter for a day or two, with a barrier (made of one of the door shutters) fastened across the doorway. They have a tiny bed of hay in one corner, and are quite happy, the old birds being not in the least disturbed by the blocked doorway, for they can easily fly over it, in and out. Then, if the weather is fairly warm, I let the young ones out into the glass-covered flight, taking the shutter from the doorway, but putting a further barrier (made of *two* shutters) across where the glass-covered part joins

the open flight. I put in one corner of the flight a lidless box on its side, with a handful of hay in the bottom for the little birds to nestle in. The box is a good size, and acts as a sort of shelter. By these precautions you will notice the young are kept on entirely *dry* flooring for some time after they leave the nest (for if the weather is wet and cold they are not even allowed to leave the shelter), and this I regard as *very* important. Young birds are given to squatting much on the ground when first they leave the nest. If they do this on *wet* ground what can you expect? A chill follows, the young one becomes very relaxed, the parents, realising that it is not quite healthy, promptly will have nothing to do with the poor thing, and it just weakens and dies. In doves, and in animals also, the healthy dislike the sick; they feel that a weakling is better dead. The survival of the fittest is to them one of the first laws of nature.

After a time the young ones get able to fly up on to the barrier, and then it is perhaps better to take it away, taking care to have the bath covered over and no deep water pots, for fear of any accident from drowning. Unless you have a spare house that you can give up almost entirely to your young birds of the year, it is better not to move them for some time after they are able to do for themselves.

Young birds are very nervous; they will fly straight at the wire, and perhaps maim a leg or a wing for life, on seeing a stranger, and, therefore, if you are wise you will allow no visitors in the aviary during the nesting season, for birds are quick to notice anyone unknown to them, and one terrified young bird may cause no end of damage both to itself and to other nesting birds.

Indeed, at all times it is as well to be careful who sees your birds. Children are always a risk, also anyone wearing very light clothes or who will point out a bird they notice with a stick or umbrella. Who can wonder if the poor inmates mistake it for a gun? Or, again, if a lady comes adorned with a many-headed fur, or a whole parrot mounted in her hat, can you blame the birds if they are frightened? I remember once being asked if two people staying in the town could see my birds. I said "Yes," and they duly came. The lady wore a hat with a bright emerald green dyed Ringneck Parrakeet—head, beak, body and tail—standing straight up in it. The young man had no more sense than to try to rouse my poor grey parrot (who was ill with inflammation) by blowing at it through the cage. I do not think either of these people cared for birds—they were merely passing the time by coming—but it was their first and last visit, for the birds were terrified. So, at the risk of being thought unkind or selfish, stand up for your birds' comfort, and have the courage to say "No" politely when you deem it desirable to refuse a request to "see the birds." Some people, of course, it is a pleasure to take round, but they are mostly people who are considerate or who have kept birds themselves, and so understand them.

When the young birds leave the nest they should be carefully watched to see that the other doves do not molest them. Several times I have lost promising young ones in this way. Sometimes I have found the parents will look after one young bird—usually the first out of the nest—and neglect the other. There will be little hope for you of rearing the forsaken young one. Some few times I have hand-reared the hardier kinds by giving them a little yolk of egg and milk thickened with oatmeal, just dipping the beak into it, and, of course, after the bird has fed, taking care to keep it warm; but I doubt if a bird so reared would ever be very strong, and to have any chance at all it must be taken in hand early, before it gets too weak.*

I have a pair of Barbary doves I keep as foster parents, for, suppose they lay, and another rare dove lays *at the same time,* and you know the latter is a bad sitter, you can easily change the eggs. This year my Barbary doves brought up a neglected young Dwarf Turtle, just a day or two old, with their own young one, who was about the same age. But it is this point that is the difficulty. I do not pretend to fully understand it, and it would be most interesting if someone would make a series of careful observations, but, as is well known, whilst doves are sitting, just before hatching, the soft food prepares in the parent birds' crop to feed the young one, and is ready by the time of hatching for that purpose. As the young one grows the food thickens.

Now suppose you place some eggs under a Barbary that were laid and sat on a few days previously to their own, what would happen? The strange eggs would hatch before the soft food was ready in the foster parents' crop, and the young would die of starvation. If, on the other hand, the eggs hatched some few days after the soft food had been ready, the chances are the young would not be fed, though whether this is because the food

*I have lately gained further experience in hand feeding. For food I should give Malt Milk, pepsinated meal (both Spratt's) mixed with water as directed; both are in powder form like flour. Besides these, "soft food," mixed with powdered biscuit and moistened, and later soaked and crushed small seeds. For a feeder use a shaped and rounded quill tooth pick, pushing the food off the quill with the right more finger. Hold the nestling with your left hand, letting it stand on a flat surface, the beak between *the base* of the first and second finger. Held in this way the young one *thinks the parent's beak is enclosing its own,* and will open its beak naturally for food. A young dove taught me this accidentally. Put your nestling on a bed of hay covered with flannel in a flower pot, placing perforated zinc over the top, and put the pot on hot pipes or a flat hot water bottle. Feed every two hours, from about 7 a.m. to 9 p.m.

has got too thick, or, not being used, has ceased in the crop, I do not know. Anyhow, the fact remains that if foster parents are to be a success the strange eggs or young ones given into their care must be almost exactly the same age as their own would have been, or they will not thrive.

You may soon tell if an egg is fertile or not, for as the young bird develops in the shell it will grow darker, and the egg heavier. An egg that is nearly due to hatch may be left for quite a long time unsat on till it is quite cold, and still hatch if the parent bird returns to the nest, because the life in it is so much stronger than in that of a newly-laid egg, to which a short spell of cold is fatal.

There is one point more I should mention. When a young dove leaves the nest (through being startled) just a day or two before it should have done, do not attempt to put it back, for a young bird at this stage will *never* stay in the nest if it has once left it, and, besides, you run the risk of making the second young one—if there is one—jump out, too, and possibly it may injure itself in doing so. Also, do not make any attempt to clean out the nest or put fresh heather in it whilst the young are still inside, even though the nest has got very dirty. A Barbary dove might not mind your doing this, but other and more nervous birds will not stand interference.

Though so very ugly in their first stages, young doves are most beautiful little things when they leave the nest. There is an innocent look in their dark eyes that is only seen in very young animals and birds, when the world is as yet a strange and wonderful place to them. Even at this early age they show their fear of man, and they will raise their tiny wings at you to strike and defend themselves. Mr. Teschemaker has just caught this attitude and expression in his beautiful photograph of a young Dwarf Ground Dove. I have never kept this bird, but have availed myself of the very kind offer of permission to use the plate, because I have never seen so typical a study of a young dove before as in this charming picture.

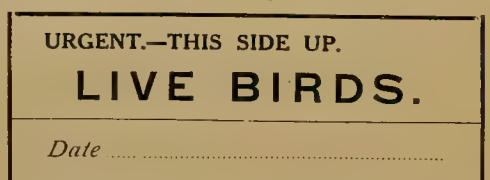
CHAPTER III.

PACKING AND SENDING AWAY, AND NURSING IN SICKNESS AND ACCIDENT.

I ALWAYS pack any birds I send away myself. At one time I used travelling box cages with wire fronts, but now I use clean empty boxes instead. There is no fear of muslin or paper being torn, as is often done to the front of travelling cages in transit, for people *will* be curious, and a label with "Live birds" on seems at once to produce excitement as to what may be inside. Now, in an ordinary closed box there is only the air hole to peep through, and that reveals very little, the bird takes no chill, and the receiver of the bird need not be troubled to return the box, as it is not worth it.

Clean wooden boxes can be had for 1d. from any grocer. Choose one the size you want—do not have it too large, but be sure it is deep enough to allow the bird to stand upright when on the perch—knock the dust out of your box and remove any splinters, and take out any nails that may be in the lid. Now saw off two of the top corners of the front of the box or two of the front corners of the lid—not too large pieces, just enough to make sufficient air-holes. A piece of a broom handle makes a good perch. Saw it just the width of the box, and when you have lined the bottom of the inside of the box with brown paper, slip your perch in, and press it well down to the bottom so that it rests on it. The perch is now secured by a nail at each end, hammered in from the *outside*. It is not a bad plan to hammer your nails just through the box *first*, then slip in your perch so that it comes over the nail points, and then hammer your nails home.

You can either put some soaked bread loose in the box, or you can put it in a little tin drinker, the kind that can be bought for a few pence the dozen. In either case, put your bread in to soak first thing, so that by the time you have done the air-holes and the perch your bread will be ready, for if it is to be of any use it must take up plenty of water. If you use a drinker, fix it in this way: Straighten out its wire hooks, mark in pencil the width between them on the outside of the box, make two holes through with a pricker, place the drinker in position inside the box (the hooks being through the holes), and hammer down the projecting wire ends of the drinker on the outside. In this way the tin will keep quite steady. You have now only to put a handful or two of seed into the box, and gum on the label, and your box is ready for its occupant. The labels I use were printed (in large red letters) at our stationer's, and are gummed at the back. They are headed like this:



the blank space being left for the address, date, and train, to be filled in. Besides this label I also tie on another on the string round the box. Cut your length of string off, put out ready the short

nails to fasten down the lid, and *then* catch your bird.

Catching, *without* injury, is an art in itself. I have never been very skilled at it. The best way to box your bird is to grip it firmly across the shoulders with your left hand, holding the bird pressed against you. This leaves the right hand free to open and close the box lid. Once safely inside, nail down the lid, tie on your string and label, and the bird is ready to start. I think it is as well to send birds off late in the day, for if at liberty in the ordinary daily routine they would not want food in the night, and so, beyond a lack of sleep, they really do not suffer much.

It is as well, though, to put the food in, for it might be late on the next day before the bird reached its destination. Arrange beforehand by letter as to what day you are sending the bird, and confirm this with an advance post card sent off the day the bird has left, so as to arrive before it. It is a sort of unwritten law that in selling a bird the buyer always pays the carriage, while on your part you, of course, make no charge for the box the bird is sent in, and you should mention it need not be returned. Of course, if you are giving away a bird you would pay the carriage yourself; this is altogether different from selling one.

It is necessary to part with your young birds if you mean to keep your old ones, and one does not like to let the old favourites go; but it has cost rather an effort to me sometimes to part with even my young birds. However, one *must* be practical. It is important above all things not to overcrowd your aviary. And then there is the side to consider that the nesting birds ought to help to pay their own corn bill, and you will find if you keep a number of birds that this and other expenses come to a good deal in the year.

I am afraid I keep my birds in rather a lazy fashion; that is to say, I neither feed nor clean them out myself, but have it done for me by two of the gardeners, George Merrills and Willie Shelton, who take great care of their small charges and are very kind to them. At first I used to do all myself, but as my aviaries increased the work got too much for me, and as they are some way from the house I found it trying work in the winter time. So now I only do the general looking after my birds, and such small things as grinding up biscuits, mixing seeds, packing birds, etc., but even this takes a fair amount of time. I have never made my aviaries pay, but, on the contrary, they are rather an expensive hobby, for when wages and food are to be considered, it does not leave much for buying new birds, and many a tempting offer I have had to refuse, for I will not sell my old favourites to buy new ones.

I have told you how to send a bird away, so now I will just tell you how to receive one. If you expect a bird late at night, get it a cage all ready, with clean sand and seed and water in preparation. Do not turn out a tired bird straight away into your aviary just at roosting time. Everything will be strange to it; perhaps it may be weak and cramped with travelling, and your own birds, having each their particular roosting place, will probably give the strange bird a hard welcome. It is much better to put the newcomer into a cage for the night, letting it have a light just to get a good feed before it settles. Do not frighten it more than you can help; for instance, put your seed and water in the cage *before* you put in the bird, so that you may not alarm it by putting your hand in the cage after it is in.

If it is in winter you might stand the cage near the fire a little, and after the bird has fed move it back, cover the cage with a cloth, and let it rest in quiet till the morning. Don't let any children or dogs and cats come near the cage. The bird has gone through enough small nervous shocks in the day without adding any fresh ones. The railway porters here are very kind, and if a bird arrives out of delivery hours they will send it down by special messenger at a small cost, so that it is not kept waiting at the station till morning. When turning out a new bird into your aviary, watch it carefully the first day or two to see it is not molested. A bird that arrives looking sickly should be kept apart, as the illness might be infectious, and in any case it needs extra care and quiet.

Never send a bird away, nor have one sent to you, on a Saturday or at Bank Holiday time. Friday night, too, is a very bad time for birds travelling, so it is well to choose some other day if possible.

Several times I have had importations of birds from abroad, and with the exception of one lot they travelled very well. The sender of the birds should write at least the mail before, telling you the name of the boat they are coming on and the address of the Shipping Company. You will then write to the latter telling them of the expected arrival of the birds and asking them to at once put them on rail (after they have been fed and watered), and, having done so, send you a telegram giving the time of the train's departure. You will, of course, enclose the prepaid telegram in your letter, and also a stamped envelope asking the Shipping Company to reply as to whether there are any charges on the birds, and also to send you the address of the man who has had the care of them on the voyage. This is generally the butcher, and when you have got his home address

PASSERINE DOVE.
Photo Mr. H. Willford.

you will send him a gratuity, the sum depending on how many birds he has had charge of, their condition on arrival, and the length of the voyage.

I have always had the birds sent to me in large heavy crates, the front of wire netting with muslin underneath; and so I arrange for a light dray to meet them at the station, and walk them slowly down to the house to avoid undue shaking. In shipping birds an ample supply of food to last them on the voyage should always be sent with them. I once heard of a case where numbers of little Gouldian Finches died on board ship, really from starvation, because too little seed had been sent with them.

Some dealers pack their birds very cruelly. I once had nine little birds sent from a distance without a drop of water in the cage—five were quite dead. Another time some tiny Fire Finches were sent in a shallow box far too large, and with

VIOLET DOVES.

no perch at all—either one or two were dead. It makes one's heart ache to think how the poor little mites must have been bruised and shaken on the way, with no foot-hold in the box, and handled by porters who possibly were too hurried to always heed to keep the box steady. I would go so far as to say, don't deal with any dealer (who *should* know how to pack birds properly) who sends his birds out like this. If he neglects them in *leaving* him, he probably neglects them whilst *with* him, and I could not rely on such a man sending me good birds.

A few tools, such as a saw, hammer, screw-driver, pincers and plyers (in one), a pricker, and a box of mixed nails should be always kept down in the aviary. You will often need them, and soon learn to use them. I always fit up my own travelling boxes, and can now manage to saw a piece of wood straight, or to hammer in a nail without knocking my fingers.

And now I come to my last notes, namely, how to treat a bird in sickness.

As well as your tool chest, keep a stock of simple remedies in the aviary. (This is where the little seed-room shelves come in so useful.) Glycerine for colds, a bottle of Branalcane for roup, vaseline for wounds (which should be bathed first with water if possible), olive oil for egg-binding, and a little bottle of brandy—a teaspoonful will do, just to have it handy in cases of collapse, where loss of time means loss of life—a little clean rag and cotton wool, and a bottle of "New Skin" (a kind of liquid court plaister), and Syrup of Phosphate of Iron for a tonic for delicate birds; one or two soft camel's-hair paint-brushes, some quill toothpicks, a strong pair of nail scissors, a flat hot water bottle, some small pieces of flannel, and, last but not least, a hospital box to put sick birds in.

The latter is my own idea. For long I had been dissatisfied with a *cage* for sick birds. With so large a bird as a dove the door of an ordinary-sized cage seemed far too small to pass the bird in and out of, and the fright of catching it over and over again did more harm than the remedies did good. You cannot have a sick bird loose in an aviary when you want to catch it several times a day, and, besides, the other occupants might molest it.

So I bought a clean, empty box, to be kept just for invalid birds. It is about 20 inches × 14 inches and 12 inches high. Be sure the wood is smooth inside and that there are no strong splinters. If you wish to be perfectly safe, tack a strong paper lining inside, but I do not think it is really necessary. Fix a broom handle perch across the box an inch or so from the bottom. Do not sprinkle sand on the floor, it might get into the bird's eyes or into any wound, but fold some pieces of brown paper just the size of the bottom of the box, and put a fresh one in every day, sliding it under the perch. A piece of wire cage fronting, rather larger than the top of the box, forms the lid, and simply rests on the top—it is not fastened down in any way. I think perhaps a wooden frame covered tightly with strong *string* netting of a small mesh would make a better cover than the wire one, as there would then be no fear of a bird knocking its head if it jumped upwards. I will tell you later on how I use this box, but will now go back to the uses of my simple remedies.

For a Slight Cold.—A few drops of glycerine in the water fresh daily. Afterwards some Syrup of

Phosphate of Iron given also daily in water. This is a splendid tonic for a weak or ailing bird.

For Wounds.—Sometimes a bird will get its head nearly scalped, its forehead knocked, or its shoulder butts scraped raw, with flying against the wire.

Wash the wound clean and dry it gently, then smear on a little vaseline or "New Skin." The latter is an antiseptic, and dries in a few moments after being applied, forming a coating over the wound. Care must be taken to cleanse the place first or you only seal the germs in. It smarts very much at first, but has a soothing feeling later. The bird should be held till the application has dried.

Roup.—This is a most dangerous and infectious disease. I have found Bleeding Heart pigeons especially liable to it, and have also had one case of a delicate young Bronzewing that caught the infection and died. A bird suffering from roup may, for the first few days, look as if little ailed it, but a close observation will show the beak slightly open, and on examination you will find one or more small whitish growths under the skin inside the mouth and throat. If these are not removed and the afflicted parts dressed they quickly increase in size and fill up the throat till the bird dies of suffocation.

I once had an outbreak of roup amongst my birds (though they were in an heated aviary), and at the time it started I knew of no sure remedy. I thought that to try and remove the growths *only* was but to torture the sufferer; further, I did not care much for handling a bird with roup. I have read that blood-poisoning may in this way be conveyed to human beings if there is any scratch on the hands. I did nothing for a fine cock Bleeding Heart, and hoped against hope he would recover. He seemed fairly well for over a week, but had increasing difficulty in swallowing food, and one morning was found dead. The next bird attacked was a hen, and later two other hens. I felt I could not bear to see my little flock of nine Bleeding Hearts die off one by one, so put my feelings on one side and searched for a remedy. I found in one of my "bird" newspaper-cutting books a letter taken from *The Feathered World* advising Jeyes' Branalcane, so I got a bottle and found it a splendid dressing, and all three birds recovered.

I removed the growths first. The pared and blunted cedar end of a camel's-hair brush makes a very good instrument, a clean piece of rag should be placed handy, and a pot of water to drop the growths into as they are removed (as they must be burnt to prevent the infection spreading); a few drops of Branalcane should be poured out into a second pot to paint out the mouth when it has been cleared. It is any easy operation to do by yourself if you get all your things ready *first*. The bird is held firmly in the left hand, the beak slightly prised open with the wooden end of the brush, and then kept in this position by pressing the tip of the beak against the first finger of the left hand. If the growth is far back tilt the bird's head rather backwards. The thumb should be round the neck, the second finger acts as a perch for the bird's feet. Don't try to do too much at once—give a few moments' rest now and then. When finished, dress with Branalcane with the brush, washing it out well afterwards.

Dwarf Turtle Dove.

I gave the affected birds a few drops of phosphate of iron daily in their water as a tonic, and of course kept them from the healthy stock, not in another aviary, but apart in cages.

Starvation.—This seems a strange thing for well-fed birds to suffer from, yet it is not uncommon where a number of birds are kept in one aviary. Perhaps through the winter they agree well, then with the oncoming of spring one cock will turn a tyrant, and unknown to you may keep a shyer bird from the food till it loses flesh and becomes very weak. You will easily discover the mischief by noticing if any bird seems hiding away. Probably on your driving it out the aggressor will advance, and the sufferer quickly retire again, telling its own tale of fear. The remedy is obvious—remove the bird to other quarters, or, better still, keep it for a time *by itself* and give a tonic in its water; and to prevent a recurrence spend a few minutes each day very quietly watching your birds, standing quite still, and not just "looking round" the aviary and going out again. You will find you may learn very much even from one day's observation, and the birds, losing their fear of you, will be seen under natural conditions.

Egg-binding and Constipation.—Warm olive oil is the simplest remedy for either of these distressing complaints. Fortunately, doves very seldom suffer from either. For egg-binding, blow up the feathers gently and let a drop or two of oil soak into the inflamed part, letting it drop gently off your paint brush. Also paint the surrounding parts, but be careful not to soil the feathers with oil. Take a little of the warm oil in the toothpick (having first rounded its end) and, carefully opening the bird's beak a little with the toothpick, let the oil run down the throat. Keep the bird in the

hospital box on a bed of hay in a warm place, and let her be very warm and quiet. The treatment for constipation is the same as for egg-binding.

Cases of Collapse.—Nothing is better than a little very weak brandy and water given with the toothpick, but only give a drop or two at a time or the bird might choke through being unable to gets its breath. You will probably need more help than this. Keep the patient in your hands, for the live heat will help to restore it, and if your aviary stove is going, heat several pieces of flannel by laying them on the top (being careful they do not scorch), and wrap round the sick bird.

As fast as one flannel cools get another off the stove and put your cold one to re-heat. In this way you have a constant succession of warm cloths. Do not get the flannels *too* hot; I mean, do not *hurry* the restoring of the bird—let it come gradually and naturally. Remember it is in a very weak state, and if you apply too strong remedies you may finally quench the little spark of life left in it. It is wonderful how far a bird may collapse, and yet live. I have had birds cold, unconscious, and limp, and yet they have come round. If you have no stove (though I think every large wooden aviary should have one), or if it is in summer, when there is no fire on, you can heat the hot water bottle, and, placing the bottle inside the hospital box, lay the patient on it, wrapped in flannel.

Over-grown Beaks and Nails.—These usually come either in very old birds, or in weakly young ones. In both cases they must be trimmed, and here your strong nail scissors will come in handy. Hold out the bird's foot as I described whilst you were ringing it, and clip the nails off firmly, being careful not to cut into the quick, a little pink line that runs down the nail.

It is easy to cut a bird's claws by oneself, but it really needs two people to shorten a beak. Have someone just to hold the bird for you, then with your left hand hold the head steady, putting your hand over the bird's head, with a finger resting on each side of the beak. Shift your fingers a little forward, gradually forcing the beak gently open, then firmly grasp whichever half of the beak you want to clip, and cut it with your right hand.

Be sure and do not cut it into the quick. It is better to take off too little at the first snip, and then to cut off a little more, than to take off too much straight away. Round off the corners nicely, and try the beak closed to see if the two parts fit properly over each other. Don't hurry, take your time over it, and hold the bird's beak firmly, or it may twist it.

When you spend a quiet ten minutes, standing quite still amongst your birds, you may notice far more than in many a hurried look round. The birds will soon learn to take no notice of you and will look on you as a friend, and not as a natural foe. It is at such a time as this that you must keep a sharp look out for such things as over-grown beaks and nails. Passed unnoticed, they may mean starvation in the one case, through inability to pick up the food, and a broken leg in the other—as indeed was, I believe, the cause of death in one of my Violet doves years ago—through the nail catching in a branch, and the bird not being able to free itself, for some over-grown nails grow quite hooked and curved.

Fits.—I have only known this happen once or twice amongst my doves. Generally it is brought on by shock or fright. In one case the bird rolled over and over, and then went stiff and rigid. I dashed cold water on the head, gave it a very little to drink, and put it in a darkened cage and, of course, kept it away from the other birds to ensure great quiet. This is where a passage or spare space in an aviary comes in so usefully. It can be turned at once into a hospital, besides many other uses. In a few hours the bird was quite restored.

Tumours on the Head, and Affected Eyesight.—This is a terrible disease, and fortunately rare amongst doves. Possibly in the pigeon I am speaking of the mischief was started by the bird knocking against the wire netting. I do not mind attending to small hurts in my birds, but to cut open a tumour was more than I could face, so I sent away the bird to a skilled operator, who has most kindly operated on birds for me at various times. He told me the operation was very easy. You simply cut a slit in the skin with a penknife, when the tumour will be found, not adhering, but loose underneath, like a little white pea. I believe the bird had several tumours removed in this way, one so close to the eye as almost to press on the eyeball. The operation was most beautifully done, not a scar left, and the head, which was all swollen, became a proper shape again. Before, the face was a mass of lumps under the skin, making the bird's head look a peculiar shape, but, strangely, the plumage was never affected, but always smooth and glossy.

I do not know if the tumours were partly the cause, but some time later this same bird's eyes began to fail. Little by little his sight went, till at last he was so blind he could not see to rise from the ground. Then his strength began to fail, and also that sure sign of weakness in a dove, a contraction or crookedness of the toes, as if the circulation were weakened, began to show.

I put down a bed of hay and some food and water near, and thought I had better leave the

bird to die. I dreaded catching him, and remedies seemed useless; but he looked so piteous—listening on all sides and turning his sightless eyes to try and locate the sound—that I had not the heart to leave him to his fate, though I had little hope of cure.

I got some boracic lotion, the formula of an oculist, and with this lotion in a little warm water I bathed the Rufous pigeon's eyes, at first three times a day, after some weeks' treatment only once. In one eye the sight was well recovered; the other eye was much better, but there was a small ulcer on the eyeball, which made it not so satisfactory as the first. One curious feature was the change of colour in the eye. When in health the eye of a Rufous pigeon is like a living ruby, but gradually in my sick bird the colour faded, and the eye became quite pale; but it recovered the colour almost perfectly in the best eye, and the other one improved.

When first I began the bathing both eyes were closed and so terribly swollen was the head that its shape was quite distorted, the eyelids standing out as if peas had been forced under the lids. Gradually the swelling disappeared, altogether on one side and nearly on the other. Most fortunately, the bird could always eat, though how it found its food I don't know. It is a good plan when you put a blind bird in your hospital box to place its seed in a shallow dripping tin (a fair size), and stand the patient *in it*. It will *feel* the food then, and if it has any intelligence will learn to pick it up.

Now in doctoring birds a little thought is needed, both to save yourself trouble and the patient pain, and as knowledge only comes from experience and this is written chiefly for *beginners* in aviculture, it will perhaps not be quite wasted space to tell you how to nurse a case of this kind. First, before you catch your bird, get *all* the things you want ready on a table. You need a small clean pot partly filled with lukewarm water (cold water would chill the eye too much), and to this add about a third more of boracic lotion. To bathe the eye use a small piece of medicated cotton wool, and when bathing do not touch the eye, which will be very tender, just squeeze the lotion over it.

When the bathing is done press the wool dry and with it mop up any drops that may have fallen on the feathers. Be sure, and this is important, to use fresh lotion and water, and fresh cotton wool, *every* time you bathe the eye; don't make an old lot do twice.

Hold the dove in your left hand, against your side, the thumb over the shoulder, the first finger round across the breast, while the second finger acts as a perch for the feet. Held in this way the bird is quite comfortable and a safe prisoner; it cannot get away, and its right wing being pressed against you secures it on that side.

A man has more advantage in this than a woman, having a larger grip and firmer hand. But with care and practice I find it quite easy to manage by myself. In bathing the eyes don't hurry. If the bird begins to try and jerk after a bit, let it have a few seconds' rest to quiet down, then start again. Don't let the lotion run into the beak if you can help it; if you hold the bird rather inclined downwards there will be less risk of this happening.

I have spoken of a "hospital" box to put sick birds in. In the case of this Rufous pigeon, it lived for some time in this box, for, of course, it needed catching many times, and could not have been caught up each time from the aviary, and also it had to be kept in the shade on account of its eyes. I want to tell you now how to manage to get your bird in and out of a box like this, and make it fresh and clean without having anyone to help you, and without distressing the bird.

First fill a duplicate pot with seed and another with water, and put them handy where you can easily reach them, or if the bird is not nervous, take out the old pots and replenish them first. The wire lid to your box must be quite loose, made of firm, heavy wire and just laid on the top, not in any way fastened down, as you want to slide your arms under it when catching the bird. In catching use both hands, and get the thumbs well over the back, keeping the wings down. You can manage to get the patient out of the box quite comfortably by raising the lid with your arms when you have once caught the bird. It only needs a little practice, and I did everything by myself for this special bird for weeks. When you have finished bathing the bird's eyes, hold it firmly against your left side, and with your free right hand put the "hospital" in order before returning the patient. Take out the paper from the floor of the box, turn up the box and knock any seed or bits out, put in your fresh paper, sliding it under the perch, and put inside the box the fresh seed and water. It is all quite easy to do this with one hand, provided you make your preparations first.

When you have done this, replace the wire lid on the box (the lid should be slightly larger than the top) *before* you put back the bird. You can now raise the lid with one finger, and with both hands carefully place the bird, its back towards you, on the perch, when it will be probably quite quiet. You may think all these little details unnecessary, but if you try to replace the patient with one hand it will most likely struggle, and if you try to put the bird in *first* and the lid on *after*-

wards, the bird will probably get away whilst you are doing it.

To ensure further quiet, I sometimes put a clean empty sack under the lid, over half the box, to make a quiet corner for the poor invalid. A great advantage in having a stove in your aviary is its value in sickness, for warmth means so very much to *any* sick bird. In the winter months, when the nights are long and dark, and the patient would die if left so long unable to see its food, I think it is better to keep a lamp burning, but, of course, not letting its full rays fall on the cage to disturb the patient.

Broken Limbs, etc.—This is not an accident that often happens, but if it should take place it is well to know what to do. I always prefer, if possible, to handle a bird alone, but in the case of clipping beaks and setting limbs you need someone to help you, because you *must* have both hands free and the patient steady. I once had a very bad break, high up in the thigh, of a Bar-shouldered dove's leg. It was caused by a Conure, and the leg dangled like a bit of string. You need some cotton wool, a splint, and some thread or very narrow tape. Your splint can be made from part of a wooden match or, what is perhaps better, the split half of a quill pen, because it fits round the leg *if* the break is in the featherless part; otherwise it would not have any advantage over the match.

Hold the bird's leg in the position it would naturally be, and gently put a strand of cotton wool between the leg and the splint, so that there is nothing hard actually touching the leg; put on the splint over this, and over this again, right round the leg, some more medicated cotton wool, and bind all round firmly with the thread or tape, but do not put it so tight as to stop the circulation. Be sure and have your splint a comfortable length —ascertain how long it should be before you start operations. When finished put the bird in a large cage without perches, a bed of hay on the floor, and food and water within easy reach. In the case of the Bar-shouldered dove the leg knit together very firmly, and it only slightly stuck out a little (though the bird used it very well), as, unfortunately, I did not set it perfectly straight.

Another case I had was that of a broken beak in a little Rufous dove. The top half was just hanging by a thread of skin, and it could not eat its seed in consequence. I plastered the beak over with numbers of strips of court plaister cut very, very narrow and of only a short length, so as not to impede the action of the beak in any way. The dove rapidly began to recover, and in a short time could hold the seed and swallow it. Then, most unfortunately, it gave the beak a fresh knock when I was not by, and lost the injured part entirely. I could do nothing for it then, and finally it died. I was terribly disappointed, for I quite thought it would have recovered, and it was such an interesting case.

I have never had a broken wing, but I have had several knocked wings, that somehow renders them stiff and useless. I do not think anything can be done for this form of accident. The bird will never fly again. All you can do is to fix it a low perch, a few inches from the ground, across the corner of an aviary, so that it may not be compelled to keep on the ground. This is bad for any bird—the cold, damp, and frost will soon ruin any bird's feet. Bleeding Heart pigeons keep much on the ground, and now and then their feet suffer—that is the chief reason why they must be brought in for the winter.

I once had a bird that got mortification in its feet. The flesh turned black, then dropped off, leaving the bone of the toes bare. Finally these broke off (just as I was trying to screw up my courage to amputate them), and the foot became almost a stump, but the bird seemed otherwise unaffected. Don't fix up any slanting branches for your wing-crippled birds to climb up. If you do they will some day be startled, fall, and injure themselves, because their wings cannot save them, so they fall heavily.

And now I have got to the end of my story about my birds, though if I could talk to you for ten minutes I could tell you a lot more, and perhaps explain it all better than in writing.

If you once start keeping birds, the love will probably grow on you, and your own keen interest in your pets will teach you more than any book. Keep a note-book of their doings all the year through. Not only will the nesting dates be a help, but you will find your log books very pleasant reading when what is now the present has become the past. Make your birds as happy as you can by personally thinking out all you can for their comfort, and by encouraging those who have the care of them for you to love and study them too. Remember you have taken away the best gift a bird has—its *free* life—by keeping it captive. You owe it some care and consideration for this.

I save my birds' prettiest feathers, and keep them in my desk in the passage. Some day I think I will mount them, placing each group between two sheets of very thin glass, not too large, and binding the plates round, after the manner of a lantern slide, adding the name of each bird the feather came from. But this is one of the things I think I shall never have time to carry out.

In the same desk is my birds' "Visitors' Book," where all who come to see my birds record the date, their name and address, and the bird they like best. It is interesting to keep as a remembrance, and to see which birds are the most popular. I think the Bleeding Hearts are an easy first now that my Masked parrakeet "Dick," the dearest and most loving bird I ever had, is dead.

I owe many kind friends my very grateful thanks for the generous help they have given me in writing this book. My birds have brought me many friends, not only in England, but in far off lands. Some of these friends I have corresponded with for years but have never met, perhaps that may be a pleasure in store in the future, one cannot tell.

No. 4 Aviary.

Bird keeping—for love of the birds—is a hobby to be in every way encouraged—it not only gives us pleasure, but does us good also—for surely the old words are still true, that

> He prayeth best who loveth best
> All things both great and small.
> For the dear God who loveth us—
> He made and loveth all.

I feel I cannot close this portion of my little book with fitter lines.

CHAPTER IV.

SUB-FAMILY TRERONINAE.

(*Vinago Delalandei*).

FRUIT PIGEON.

(*Vinago Delandei*).

Habitat.—Eastern and southern Africa, from Mombasa to Kaffraria and inland as far as the Nyassa.

Length.—About 12 inches. In shape, strongly built, but rather clumsy.

Colouring.—Bright grass green, with a dark purple patch on each shoulder: green head, washed with grey and purple, thighs and under-parts bright canary yellow. The basal half of the beak scarlet, the remaining half light slate colour. The eyes light blue, the feet and legs scarlet.

WILD LIFE.

Mr. T. Ayres writes of this bird: "I found these handsome pigeons somewhat scarce in the Magaliesbergen in winter; but my brother tells me they are exceedingly plentiful there during our summer months when wild fruits abound; they are found in densely foliaged trees, keeping very quiet if anyone approaches; and often one may walk quietly right under the trees where they are, when they dart out suddenly, generally one at a time. They are sometimes solitary, but often in small flocks: Their food consists entirely of small berries."

During Mr. Jameson's expedition to the Mashona country this species was procured on the Umvuli River in August and September; it feeds on the wild fruits which the Boers call the Moople, the tree of which is handsome and dark-foliaged, and grows here and there along the banks of the river. The pigeons are also very fond of an insipid wild fig, about the size of a walnut.

Another writer, Mr. Swynnerton, also speaks of this pigeon as being generally found feeding on the wild fruits and figs; it seldom descends below the upper branches of the trees. He mentions the fact that there are two broods reared in the year, young birds being brought to him in October, and eggs being found in January. The nests are very frail, made of sticks, and built about 10 ft. from the ground, usually in the large wild fig trees scattered about the open country.

Other writers make the following notes on this pigeon: that it is partially migrant, "its appearance and disappearance being coincident with the ripening of forest fruits and berries;" it is said to be very difficult to observe when in the fig trees, its plumage being much the same colour as the leaves. The eggs are white, and two in number. The cry of this pigeon "is a soft whistle; the flesh is tender and of a delicate flavour."

LIFE IN CAPTIVITY.

Of fruit pigeons I have only kept two kinds, and neither of them for very long. One was a large black and white pigeon, with feathered feet, from Australia (probably a White Nutmeg or Torres Straits pigeon), the other a beautiful specimen of Vinago delandei sent direct to a friend of mine by her brother out in Africa.

My friend had no aviary, and, as "Chibwana" was ailing, she asked me if I would take the bird and see if I could bring it round. She told me that he loved to be kept where the firelight fell on him, evidently thinking it was sunshine, and would now and then make a curious whistling sound.

"Chib" arrived here one snowy day, and I did my best to nurse him back to health, but all in vain. It was evident he was not well, and at first he seemed disinclined to eat, and was very shy and nervous; instead of walking he hopped about in rather a clumsy fashion. He could eat nothing but boiled maize, though I tried chopped apple, dates, and figs. For a time he seemed better, and then again worse, and I decided, as it seemed a case of kill or cure, I would give him a course of pigeon pills and tonic (though doubtful how they would suit a *Fruit* pigeon). For a time the bird greatly improved, and was a most docile patient to nurse, but I think I started his cure too late, for he died at the beginning of April; had his case been taken in hand sooner perhaps he might have recovered, but to handle a sick nervous bird often does more harm than good, and should not be attempted unless the need is great. A specimen of this beautiful pigeon was presented to the Zoological Gardens in 1892. I do not think any of the Fruit pigeons should be considered hardy.

Mr. Swynnerton, who kept this particular Fruit pigeon in captivity in Africa, says of it, "They are stolid birds these in my aviary, even when freshly caught, allowing me to approach quite close before moving, and merely staring stupidly, though quite evidently in fear. The call is a piping "Kureti, Kureti, Kureti," followed by a harsh "Kurr-rr."

TYPICAL PIGEONS.

(*Columbidae*).

The Triangular Spotted Pigeon.
The Spotted (or Spot-winged) Pigeon.
The White Crowned Pigeon.
The Rufous Pigeon.

TRIANGULAR SPOTTED PIGEON.

(*Columba guinea*).

Habitat.—West Africa, from Senegal to Angola, and across Central Africa to East Africa, from Uniamnezi to Abyssinia, Sennaar, and Kordofan.

Length.—About 13 inches. Shape, very strong, rather upright carriage.

Colouring.—Principally dark ash grey, the neck reddish, the tips of the feathers being bifid. The wings are covered with white spots, triangular in shape, giving the bird a very distinctive look. There is a patch of bare red skin round the eye, the iris is also red, and so are the feet and legs. The sexes are very much the same in colouring, but the cock is rather larger and thicker looking than the hen; her spots on the wings are duller and smaller, and the naked skin round the eye not so large.

WILD LIFE.

Dr. Hopkinson tells us that the Triangular Spotted pigeon is known in Africa by the name of the Rhun pigeon from its fondness for building in the tall Rhun palms, and that the bird is only found in these parts where this palm tree grows. This pigeon is particularly common on McCarthy's Island and the district round it; the note is a long drawn out "Ku," followed by a series of shorter ones—Ku-ku-ku-ku.

Von Henglin says that this pigeon frequents forests, mountains and plains, houses and ruins; it builds on the roofs of buildings, and in Abyssinia is the common domestic pigeon; it also nests in the Dolib palm trees. The Triangular is seen either in pairs or small flocks, feeding upon the roads or in the stubbles, and coming in the evening to drink at the pools; it breeds in our winter. We are also told that in its wild state this pigeon is very destructive to crops, and a great pest to the farmers, only leaving the fields when they retire to roost in the woods and rocks.

LIFE IN CAPTIVITY.

I have only kept two specimens of this hardy pigeon, and found both my cock and hen very harmless towards other inmates of the aviary; but they are too large birds for anywhere but a roomy place, and this is the chief reason why I have ceased to keep them. At the time I had my birds, some years ago, they were worth about 20/- a pair, but they have gone down in price, and lately I saw some offered for sale for almost less than half this sum, whilst a pair in rough plumage were only 7/6.

The late Mr. O. E. Cresswell wrote in January, 1907 (in describing a visit to the Jardin D'acclimatation in Paris), that the Triangular Spotted pigeon is "seldom to be met with in England, and then far too dear." There were several specimens

in the Paris gardens, and our own Regent's Park collection possessed a bird (or birds) as far back as 1865. Young ones were bred there in 1885 and many times since. My own birds never nested. The coo of the cock was most peculiar, almost like the barking of a small dog.

THE SPOTTED OR SPOT-WINGED PIGEON.

(*Columba maculosa*).

Habitat.—South America, Uruguay, Argentina, and Patagonia.

Length.—About 14 inches. Shape, very finely built, strong and upright.

Colouring.—General colour grey, the shoulders and upper wing coverts greyish brown. The upper part of the wings are covered with buffish triangular spots, showing very distinctly against the darker background. The bill is grey, the feet red, and the iris is light slate or whitish. There are no iridescent feathers on the neck, but over this portion, and the head and throat, is a faint purple-pink bloom that is very pleasing.

WILD LIFE.

There is not much to note as to the wild life of the Spotted pigeon. Dr. Butler tells us it is very destructive to the crops in its own land, settling on the fields and eating the wheat before it has had time to sprout, and as the birds go about in large flocks much damage is done by them. It is said to feed largely on lucerne in its wild state, and many young shoots have been found in the birds' crops. The coo consists of five long drawn-out notes.

LIFE IN CAPTIVITY.

I have not kept this pigeon for very long myself, so can give you no nesting notes about it. I consider it a very handsome bird, for though the colouring is not bright, yet it has a very harmonious and striking effect, which is shown off by the bird's fine shape and carriage. Though of large size, I have found it very harmless towards other doves—seeming to be more nervous than aggressive. The Spotted pigeon was first kept at Regent's Park in 1870, one specimen being purchased in that year. It was bred there in 1894 and many subsequent times since. The Duchess of Bedford tells us that two pairs of these pigeons were nesting out of doors at Woburn in 1907 so early as February. One nest contained eggs, the other young birds, and both nests were built in Araucaria trees. The old birds had been turned out some two years previously. The value of the Spotted pigeon is about 20/- a pair.

THE WHITE-CROWNED PIGEON.

(*Columba leucocephala*).

Habitat.—Greater Antilles, Bahamas, and Florida Keys; also Santa Cruz, St. Bartholomew, Cozumel Islands, and the Coast of Honduras.

Length.—About 14 inches. Shape, rather long, but finely proportioned.

Colouring.—The general colour of the adult male is leaden grey, the back being a rather deeper shade than the breast. The crown of the head is white (extending just below the eye), bordered behind with grey, the nape deep maroon; the collar below is very handsome, being metallic bronze-green, changing in different lights, each feather being bordered by an edge of black like velvet. The naked skin round the eye is white, and the eye

WHITE-CROWNED PIGEON.

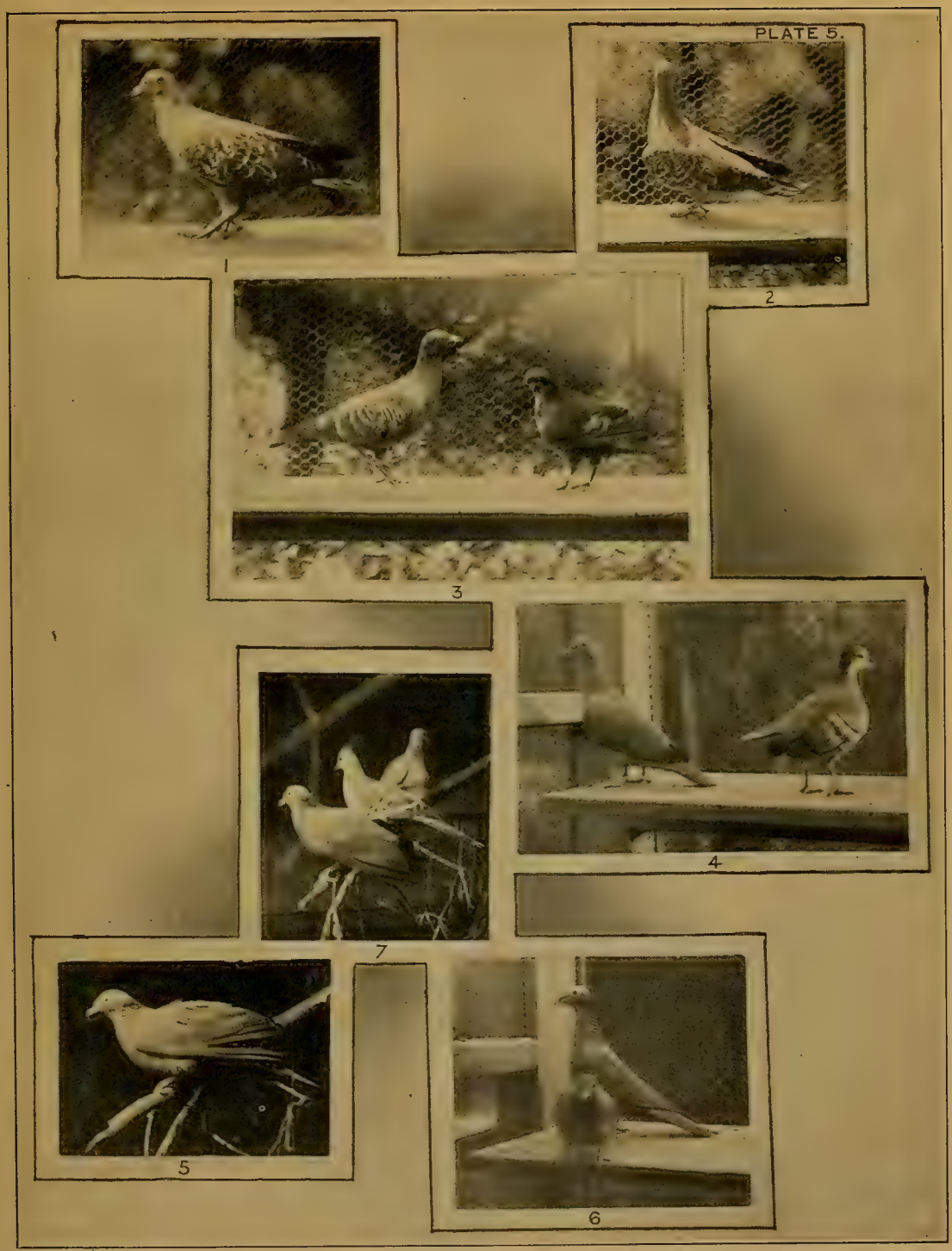
Photo by Mr. D. Seth-Smith.
From The Avicultural Magazine.

itself pale buffish white, while the eyelids have red edges; the bill is greenish white, with carmine cere. The feet are dull red. The hen is smaller than the cock, her colouring duller, and the crown of her head greyish.

WILD LIFE.

Shaw tells us that this pigeon feeds largely on the berries of the sweet wood; and resides amongst the rocks, where it is found in great numbers. He adds that the bird is very good eating when it has been feeding on certain plants, but at other times the flesh is very indifferent.

In that delightful book of Gosse's on Jamaica birds he also mentions that in the months of



1 and 2.—Spotted Pigeon.
3.—Spotted Pigeon and Brush Bronze-wing Pigeon.
4.—Rufous Pigeon and Bleeding Heart Pigeon.
5 and 6.—White-crowned Pigeon.
7.—White-crowned and Crested Pigeons and Senegal Dove.

September and October the flesh of the White-crowned (or Baldpate) has an "exquisite flavour." This bird feeds largely on berries, and so many as thirty pigeons were observed eating on one tree. They feed twice a day, early in the morning and late in the afternoon, flying often over 20 to 30 miles of sea to the feeding grounds. The White Crowned breeds in thousands on the many little islands, returning to the mainland to feed. The nest is built in bushes, about 3 or 4 feet from the ground, and is flimsy in structure. The general time of nesting is in June, and in August shooting parties go out to destroy the birds.

Mr. Bonhote mentions that this pigeon is not met with in winter in the Bahamas, but whether they are migratory or hide in the thickest bush he does not know. In Cuba the White Crowned is said to be a resident species and very common. It frequents the forests throughout the year, and collects in large flocks when the berries are ripe; being gregarious, many birds will nest in the same tree.

LIFE IN CAPTIVITY.

The White Crowned pigeon is a very fine imposing-looking bird, but too large to be kept in a small aviary. Mr. Seth-Smith found it very wild, even a male bird bred in captivity in Jamaica, catching the wild fever from the hen. I have only kept a few specimens, but cannot say I found this the case; but all birds vary, and I fancy some of my White-crowned pigeons, though sent to me from their own country, had been kept in aviaries before. The friend who sent me them said that one of these birds was so good-natured it would even let a tiny Passerine dove try to bully it, the White-crowned regarding the little mite's onslaughts with good-tempered indifference. One of the chief beauties of this handsome pigeon is its lovely neck, which always reminds me of the scales of a mackerel. Against its snowy crown and rich leaden-grey body the effect is very striking, and the fine upright carriage of the bird adds to its noble appearance.

Although Mr. Seth-Smith's birds were so wild they soon started to nest, the first two nests each containing one egg, which in both cases hatched, the young birds being deserted when a fortnight old, and subsequently dying. The two eggs of the third nest were hatched under tame pigeons and shared the same fate, the foster parents declining to go on feeding just when the young White-crowned were nearly able to fly.

After so many disappointments it is pleasant to read that three young ones were reared later, the first nest (with one young bird) being built in a quiet corner in some faggots, about 4 feet from the ground. This bird was very wild, the two later hatched ones being not quite so timid; these latter were evidently a pair, for one was darker than the other and had a lighter cap. The first reared young bird was nearly as large as its parents when it left the nest, and was a dirty brownish-grey all over; there was no white on the crown, though it was a lighter shade than the rest of the body.

In the before-mentioned "Birds of Jamaica" Gosse gives a most interesting account of some White-crowned pigeons that he kept when quite young birds. He says they were both "exceedingly ugly; long-necked, thin-bodied, the head not well rounded, the fleshy part of the beak prominent, and its base unfeathered. The whole plumage was blackish ash coloured, each feather slightly tipped with paler, and the feather of the head terminating in little curled grey filaments, which added to the uncouth appearance of the birds."

These pigeons became very playful; they were kept in a large packing-box that had been lined with paper, and this they delighted in stripping off with their beaks, or in pulling at the threads in a darn in the gauze front of their cage. One would pretend to rob a White-fronted dove of some orange pips (that were specially put down for the latter's benefit), but would drop them again if he succeeded in getting one. This White-crowned would always take a grain of corn from Mr. Gosse's hand, even if he did not eat it, and would seize his finger, when he put it through the gauze, and try to play with it most vigorously, sometimes quite inverting the head. Mr. Gosse noted that his birds cooed much towards the end of the year, and often during the night, especially in January, when the winds from the north raged about the house.

The White-crowned pigeon was kept at the Zoo in 1865, and bred there the following year and many times later. The price of an imported pair is about 20/-.

THE RUFOUS PIGEON.

(*Columba Rufina*).

Habitat.—Guatemala, down to Columbia, Guiana, Brazil, Ecuador, and Peru.

Length.—About 12 inches. Shape, long and heavy, with rather short thick legs.

Colouring.—Adult male—Forehead purple, back of crown and upper neck rich metallic blue green, lower neck purple (the line between this colour and the metallic blue-green being very clearly defined), upper breast purple, the upper wings and shoulders red purple, the lower wings olive, the long wing quills blackish, back and rump dark grey, tail blackish grey. The lower breast rather lighter

purple, the thighs and underparts light grey, the feathers on the thighs coming low down on the legs. The beak lead colour, the feet light crimson, the eye very rich ruby-red. The hen is much the same colour as the cock, but has very little red-purple on the mantle or shoulders; she is more olive-brown, and her lower breast has a brownish wash over the purple; her forehead is a lighter purple than in the cock.

WILD LIFE.

The Rufous pigeon seems to vary in numbers in its wild state according to the time of year when the fruits are ripe or otherwise, as it feeds largely upon them. When this food is plentiful it is said to be common in the forests in Brazil, where the natives know it under the name of Gallega. Mr. Underwood, in an article in the Ibis on the Birds of the Volcano of Miravalles, says this pigeon is "one of the most abundant pigeons of Miravalles. Of an afternoon one would see numbers of them conspicuously seated on the highest branches of the trees standing out in relief against the sky."

Mr. Loat, another writer, tells us that "the wild fruits attract the common pigeon (*Columba rufina*) sometimes in great numbers; they are generally fat and make good eating." Again, Mr. Sclater speaks of the Rufous as "common but very shy; found in the deep bush, feeds principally on the ground." While still another account of the bird says, "Common in the forests of the lowlands, feeding in large flocks amongst the fruit trees."

LIFE IN CAPTIVITY.

I think it was in 1905 that a pair of these most beautiful pigeons were sent over to me, amongst a number of other doves, from Jamaica. They had been used to aviary life, and had reared one young one in captivity already. If I remember rightly, I understood that this pair of doves—their name then unknown to both the sender of them and myself—had been sent to Jamaica across in a boat from the mainland, from a little place called Barranquilla.

This place was noted for its Panama hats, and many thousands of pounds worth of hats left it every year, the people paying for what they required in hats instead of coin.

I was so unfortunate as to lose my old cock after some time; he was not ill long, and as I was going away the day after I first noticed he was not well, I decided to catch him and give him some medicine, as I did not like my birdman to have the responsibility of doing so whilst I was away. Whether the medicine did not suit him, or possibly being caught frightened him, I do not know; but the bird got worse instead of better, and in a few hours died. He seemed to suffer from something wrong with his breathing, and afterwards seemed partially dazed, but as I did not have a *post mortem* on him, I do not know the cause of death.

Before this cock died the pair had reared a fine young one—the first, I believe, to be bred in Great Britain—for they had begun nesting within a week after landing in England. This young cock was now almost as large as his parents, and at the time of the old bird's death a second young one only a few days old was in the nest. This younger bird fell out of the nest a day or two later, and was picked up cold and almost dead. To my surprise, after a time, the warmth of my hand revived it, and finally, under the care of some Barbary doves, it grew into a fine bird. When nearly full grown, however, it died from some unknown cause.

This left me with only the old hen and the young cock. They nested and several fertile eggs were laid—I must tell you the Rufous pigeon lays only *one* egg at a sitting, the egg being large and white and rounded at *both* ends, though oval in shape—but after a time the young cock began to suffer from lumps or tumours in his face; up to then he had been particularly strong and healthy. I had this bird operated on, and treated it myself (of which I have already told you in the chapter on sick management), and for a time it quite recovered; but in 1908 I lost it. In its younger days this bird had two fits at long intervals, but rest and great care restored it.

My friend in Jamaica had still the odd Rufous pigeon that the old birds had bred before they came to England. At first he thought it was a hen, but finding it was after all a cock he very kindly sent it to me. It was a very fine bird, and last year I nearly bred another young Rufous pigeon.

The birds started nesting, not for the first time, in June. I supposed it hatched on June 10th, as an eggshell was found on the floor. On June 24th the young bird was still invisible, but the old bird looked risen up on the nest. Four days later, on going down to the aviary, I found both the parents off the nest and the young bird caught in the branches. I rescued it and put it back in the nest, when the old bird returned to it. I took some notes at the time of the young one's plumage; it would then be about 17 days old. Its general colour was slate-grey with a reddish tinge on the wings; the back of its head and tail were all quills (of unburst feathers), giving it a very strange look; the head was rather small, the legs thick, the feet large. It seemed helpless but healthy, and was very ugly.

Again next day it was rescued in the same way, and after this it appeared to fairly settle down in the nest. About July 2nd its quills disappeared

from its head and tail, making the head look larger. Two days afterwards it roosted outside the nest, closely guarded by both birds; the day after it roosted still further from the nest; by now, when over three weeks old, the young one was very much the colour of its parents, only the shades were fainter, and its eyes were *dark*.

Four days afterwards the young bird came down to the ground, in the morning. I had to watch it carefully and put up some protection at night, for it continued its misfortunes by getting into the birds' bath. It remained on the ground to roost, and this seemed to trouble the old birds. At this time its eyes were still dark, the grey on the head was now defined at the back by a fine line. Whether the hot sun affected the bird or not I don't know, but it did not seem nearly so strong as when it was in the nest, and its head began to shake, apparently from weakness, a very bad sign in a young bird. Even by July 10th, when it was a month old, it made no effort to feed itself.

Meanwhile the old birds had made a nest of fir twigs they had snipped off the fir boughs; the hen laid one very small egg, so I took all the nests down. The young bird lived a few days longer, and died whilst I was away from home. I still have the old pair, and they have nested several times this year (1910), but the eggs seem unfertile, though both birds are in lovely plumage, the bloom on the purple of the cock and the blue-green on his head being exquisite; the culminating point of his beauty being his brilliant ruby eyes, which are like real jewels. The hen is as fine in her own way, but she is not so regal as the cock. My friend in Jamaica has had no more Rufous pigeons sent him, but I believe they have had some quite recently at the Zoo, and that last year they successfully nested. Several had been kept there many years ago—as far back as 1867.

CHAPTER V.

FAMILY PERISTERIDAE.

The Martinican (or Aurita) Dove.
The White-winged Dove.
The Madagascar Turtle-Dove.
The English Turtle-Dove.
The Barbary Turtle-Dove.
The Half-Collared Turtle.
The Deceptive Turtle-Dove.
The Damara Turtle-Dove.
The Dwarf (or Ruddy) Turtle-Dove.
The Necklaced Dove.
The Senegal Turtle-Dove.

MARTINICAN (OR AURITA) DOVE.
(Zenaida Aurita).

Habitat.—Martinique and other of the West Indian Islands, also in South America; the Lesser Antilles, St. Croix, also Jamaica.

Length.—About 11 inches. Shape, short, plump, and upstanding.

Colouring.—Adult male—Head, back, and wings chestnut, quill feathers of wings blackish edged with whitish, irregular black spots (edged with white) on wings; neck, very beautiful iridescent purple and golden-green, two metallic dark blue marks on cheek, one directly behind the eye, the other lower; chestnut throat, fading into pale purple vinous, under-parts and under tail feathers pure white, upper tail feathers chestnut and black; feet crimson, iris black, very full, round, and dark. The hen is very like the cock, but rather smaller, her neck not so iridescent, and the breast less purple-pink.

WILD LIFE.

The Martinican, or, as I prefer to call it, the Aurita Dove, is very common, though so beautiful, and may be found in abundance in Jamaica (where it is known as the Pea Dove) and also in South America, the latter birds being more brightly tinged than the Jamaican ones, being the reverse in this respect of the little Passerine dove. Gosse says that the Pea Dove is very timid, frequenting the vicinity of water more than any other variety of dove in Jamaica, and that when the bird flies the flight is very rapid and "performed with a peculiar whistling of the wings, by which it is at once recognised, though unseen." The Aurita feeds on various fruits and seeds; pimento-berries, orange-pips, hop-seeds, castor-oil nuts, physic-nuts, maize, and the smaller seeds of the pasture weeds. The flesh is white and juicy and considered good eating when in good condition. On one occasion the Pea Dove has been known to feign a crippled wing to lure intruders away from the nest. The nest is a loose platform of twigs, no leaves being used, and is often built in an orange or a pimento tree.

LIFE IN CAPTIVITY.

The Aurita Dove is a special favourite of mine in spite of his tyrannical ways over others of his tribe. I am afraid this is a very common fault of this dove, and that my old cock is in no way exceptional in his behaviour. He is still one of the finest birds I have; in plumage and condition simply perfect, and yet I have had him some 12 years, and he was adult when I bought him with his hen. This was in 1898, and I believe I gave about 16/- for the pair. Only very few specimens were in England then, and I got my pair of birds

1, 2, 3.—Aurita Doves. 4.—English Turtle Dove. 5, 6.—Barbary Doves.
7.—Barbarys and English Turtle Dove. 8, 9.—White-winged Doves.

through the kindness of a friend, who showed me several of these doves as something rather uncommon.

My old cock began early to show his character. I shall tell you in the accounts of the Necklace and the Picui doves how he bullied first one and then the other. Once he met his match, and that was in the cock Bar-shouldered dove, who was a perfect tyrant, though smaller than some of his opponents. My Aurita carried his perverseness so far as to wish to retain the monopoly of the trap cage (that I had set in the aviary to catch some birds) for himself and his wife, refusing to allow the other doves to enter it—which, as he was *not* the bird I wanted to catch, was rather hard on me as well as on them.

My first hen died in 1903; she had been in bad health for some time previously, and had diseased feet. In the same year I bought a second hen. She is one of the ugliest birds I have ever seen, for she must at some time (before I had her) have had a terrible injury to her head, for there is a great piece of bare skin above her eye that will never have any feathers on again whilst she lives, and it gives her face a rather drawn and distorted look. But I would not change her for the most beautiful hen bird you could give me, for she is the most faithful little nesting dove you could desire. She never tires of her eggs, and her chief idea about her babies is not to drive them early into the world—as is the idea of so many doves in bringing up their young ones—but to keep them by her as long as she can, brooding and caring for them whilst ever they need her.

The consequence is that when the young Auritas really leave the nest they are able to fly well at once, being several weeks old, and never look behind them. I have one out now at the time I write, a perky little bird just like the old cock in colouring, except that as yet he has no bronze neck; his breast is a pale brownish shade, not the pretty pinkish tinge it will have later on, and the white spots in the wings are not so conspicuous, nor his chestnut quite so deep a shade; except for these few details the young bird is very like the old birds in colour, even to the markings on the wings and the black lines on the face, which are plainly showing.

It was a pretty sight to see the hen on the nest, and a very black-eyed nestling peeping out, warm and comfortable, from her feathers. At last I think he got too large to be brooded, and then his mother sat by his side.

Although Gosse's book on Jamaica birds was written so many years ago, the little ways of the Aurita dove, that he so well describes, remain the same to this day. He notes how they have a habit of "jerking the head by quickly shortening and then lengthening the neck, immediately and invariably followed by a flirt upward of the tail; this action my captives were perpetually performing at intervals of a few seconds when not walking." You would be amused to see even my young one just out jerking his little tail in a most approved and upgrown fashion; he might have been practising it ever since he left the shell.

Another point about the Aurita which Gosse also notes is its restless ways, but it should be noted his doves were only kept in a *cage*, and this makes a world of difference. He says the birds walked rapidly about the cage floor all day long, invariably walking over each other rather than deviate from their course. I have had several private consignments of doves sent me in long crates from Jamaica, and find this restless way of birds (even trampling over each other) is very general; but I think if Gosse had loosed his birds in an aviary he would have found them behave differently. I put down this habit of wandering to two causes—a desire to find a way of escape, and a great dread of being inspected by human beings at too close quarters.

The Aurita has a way of sobbing and moaning when it is caught that is most curious to hear; it is like a child or animal in distress. It does this whilst held in the hand, and any one might think who heard it that the bird was being put to the greatest torture. I only know of one or two other kinds of doves who have this trait, and none of them are so noisy in their imaginary distress as the Aurita.

This dove was kept at the Zoo in 1873. It has often been bred and frequently imported; the price is about 16/- a pair. It is very hardy and stands the cold well.

WHITE-WINGED ZENAIDA DOVE.

(*Melopelia Leucoptera*).

Habitat.—Southern border of the United States, from Texas, New Mexico, Arizona, and Lower California, southward to Costa Rica and the West Indies.

Length.—About 11 inches. Shape, well proportioned and shapely.

Colouring.—A soft drab, and whitish on the under-parts, the long quill feathers in the wings dark brownish black; when the wing is in repose a very decided band of white runs along it, from which the bird evidently derives its name. On the neck is a lovely gold and purple sheen, very beautiful when seen in the sunlight. Below the ear is a small slanting black mark. The eyes are bright orange surrounded by a patch of sky-blue skin, which greatly adds to the bird's beauty. The

feet are bright crimson, the beak black. The hen is the same colour as the cock, but there is not so much sheen on her neck, and she is slightly smaller in size.

WILD LIFE.

The White-winged Zenaida Dove is one of the commonest birds in the West Indies. It feeds on a kind of small bean, rather like a wild pea. This plant is very common, and grows as a bush, covering many acres.

We are told by Gosse in his "Birds of Jamaica" that the White-wing lives in flocks of 20 or 30, and when flying the birds go in a body like tame pigeons. They feed on the seeds of the castor-oil plant, the orange, and the physic-nut, and are very easily taken in springes baited with orange-seeds. Sometimes only the foot is caught in the noose, when the bird will not struggle, but occasionally one is caught by the neck; and Gosse tells of one instance where a poor White-wing cut its head off with giving a sudden jerk when it felt itself caught. The black natives are not humane in their trapping of birds, nor does their suffering or injury when caught arouse their pity. They will set their traps and not visit them for days, quite careless of the fact that the poor prisoners may be injured as well as starving. When the rains fall the White-wings leave the open country and take to the woods and morasses. They are said to build a very fragile nest in the pimento, orange, and seaside grape.

LIFE IN CAPTIVITY.

In June, 1901, about 50 White-winged doves were imported to England; they were said to have come from Egypt (which was obviously an error), and were sold under the name of Pecunia Doves. I bought a pair for 15/-, and though the birds were newly imported, they were in good feather and condition. The cock, however, unfortunately injured himself on the journey, for he arrived with the crown of his head covered with dried blood, and besides this, one side of his face quite pushed in, giving him a most curious look, as if the face were on one side. Strangely enough the eye was uninjured. I can hardly think this latter hurt was of recent date, for the bird did not seem greatly affected by it.

About the middle of May the birds began to nest. Two nests were failures, both being deserted, and one, if not both, contained fertile eggs. During this time the cock was very bad tempered towards the other doves in the aviary, never really hurting them, but chasing them about. Towards the end of June a third nest was made, and this time the birds sat well. On July 9th I found an empty eggshell on the floor, and a few days later could see the young ones in the nest quite plainly.

They were very pretty—soft drab with brown eyes; the white band on the wings, and also the white in their tails, was very decided. By July 22nd, being then about a fortnight old, the first young one left the nest, followed a day or two later by the second; both seemed rather weak on their feet. However, they both survived, and by August 1st stayed out of the nest altogether. When they first appeared they were 7 or 8 inches in length, and very long and slender in shape. Both birds grew very fast, and soon were nearly as large as the hen, but slimmer. They were rather darker drab than the old birds, and had no blue skin round the eye nor sheen on the neck; the eyes were dark brown, and in one young bird I could just see the dark mark coming beneath. The feathers round the eye were whitish, and a wash of pale chestnut came below the eye, merging on to the throat. The feet were pale flesh colour, the beak light pinkish.

When the White-winged cock attacks another bird he does so in the same manner as the Barbary, lowering his head until it is in a straight line with his body and then charging the offender. Once only (as far as I remember) have I had a dove of this size killed outright by another. I was so tired of the aggressiveness of a cock White-wing and a cock Crested dove that I put these two pairs together, thinking one would be the master, and the other would settle down, and all the rest of my little dove community would benefit. An hour or two later I came down to the aviary, and was aghast to find my White-wing cock laid on the aviary floor dead; he seemed to have only had one peck just between the neck and shoulders; he was a splendid specimen, and in spite of his bad temper, a great favourite of mine.

At the time the White-wing nested I had three other pairs of doves that all brought up young ones during the season in the same aviary. These were Bleeding Hearts, Necklaces, and Senegals, and the aviary was only 16 x 6½ feet in size. The wonder is that *any* of them bred in so crowded a space; two pairs of birds were quite plenty, at the very most three, but with the latter number one could not hope for much success. Nowadays I keep far fewer birds together, and am sure it is much the wiser plan if you want them to do well. The White-winged dove was kept at the Zoo in 1874. It is often offered for sale at the present time, the usual price being about 16/- a pair. It is very hardy and stands our climate well. Just lately I have seen it offered for so low a sum as 7/6 a pair.

THE MADAGASCAR TURTLE-DOVE.

(*Turtur Picturatus*).

Habitat.—Madagascar. It has also apparently been introduced into the surrounding islands, namely, Réunion, Mauritius, Seychelles.

Length.—Between 11 and 12 inches. Shape, strongly built, but well proportioned.

Colouring.—Dark grey head, paler on the chin; mantle and upper neck rich maroon purple, faintly speckled with small dark spots; upper wings rufous brown, lower half of wings olive brown, long wing quills blackish with lighter edges, lower back olive brown also. Breast light vinous, under parts whitish, under tail feathers black and white, upper tail feathers brown. Beak light grey, basal half pinkish grey. Eye rich ruby, naked skin round eye dark red, feet crimson. Hen very similar to the male, but smaller and duller.

WILD LIFE.

These doves are said to be very common in Madagascar, where they are found in the plantations and cultivated fields in small flocks of 6 to 8. They walk well, and fly rapidly without noise, and can turn quickly if pursued. They make great ravages in the rice fields, both at the time of sowing and harvest, being largely grain eaters. The nest is flatly and roughly made of grasses and small roots, and is placed in low-growing trees. The eggs are white, and two in number. This dove is said to be good eating, the flesh being very delicate.

LIFE IN CAPTIVITY.

I have kept the Madagascar Dove for only a year or two, and have not so far reared any young ones, though the birds have had several nests and laid eggs. My present pair of birds sit very steadily indeed for a time, and then without warning will desert the nest. Yet you would think when they first began to sit that nothing would move them, they sit so closely. To Mr. Newman belongs the honour of first breeding the Madagascar dove in Great Britain.

He considers it the least graceful of any Turtle-dove he has seen, the tail being relatively short and the legs rather long, whilst the bird's body is a very sturdy shape. The notes of this dove are varied, one, its fighting note, consisting of a sort of grunt, whilst its coo proper is one of "considerable sweetness," the bird drawing himself up very straight, and then bowing low to the ground as he utters it. The eggs are large for the size of the bird. Two eggs, deserted, taken from my own doves vary very much in shape, one being oval (with one end rounded, the other end slightly pointed), the other egg being very round and full, shorter than the other and with scarcely any point at the one end.

Mr. Newman's birds built their nest of quite strong twigs, making a very firm nest; they sat well, and the young when hatched were covered "with bright yellow down, almost reddish fawn on head, back, and outer edges of wings." The first young plumage, after the downy stage, is very different from the parent birds, for they lack the vinous purple almost entirely, being brownish grey, with the feathers edged with chestnut, the chestnut tips to the wing feathers forming two distinct bars across it. There are no dark marks on the neck. The young birds bred later by another aviculturalist had a "greenish tinge" to the plumage, but this was not visible in Mr. Newman's birds. At eight weeks old the eldest young bird had many purple feathers on the shoulders, and the chestnut edges to the feathers had greatly faded.

The old birds proved excellent parents, the hen hitting out with her wings if the nest were too closely looked at, and if obliged to leave it she would flap her wings and try to draw observation from the nest by pretending to have injured her legs, dragging over the ground as if she was hurt. It is unusual for a captive dove to act in this way, though frequently done by some species in a wild state.

This handsome dove was first kept at the Zoo in 1866. It seems hardy and able to stand the cold well, always looking "tight" in feather. I have found my birds rather inclined to be aggressive to other species of doves, but Mr. Newman found his birds fairly amiable; but it would be unfair to judge on my part from one or two specimens, for birds differ in their characters as much as human beings.

Since I wrote the above my birds have hatched one young one, and look like rearing it. It is about half the size of the adult bird and still in the nest, the hen sitting on an egg, newly laid, in the same nest. When I went to inspect the nest the other day (the old bird being off it) the young bird raised itself on its legs and made a most curious noise at me—a sort of hissing sound. It looked exceedingly strong and healthy, but was the ugliest young dove, I think, I have ever seen, the down on it being so very hairy.

The old birds have so far been splendid parents, and I have seen the little creature's bare crop (before its skin was so covered with down and feathers), looking so very full that it hung like a bag at the side of the neck, and the wonder was it was not killed with kindness; it looks like making a very fine bird.

1

4

2

3

5

7

8

6

1.—Senegal Doves.
*2.—Senegal Dove sitting.
3.—Senegal, White-winged Doves, and Crested Pigeon
4 and 7.—Ruddy (or Dwarf) Turtles.
†5.—Hybrid Dove (Necklace and Senegal).
6.—Necklace Doves and Indian Green-winged Dove.
8.—Madagascar Turtle Doves.

* *Photograph by Mr. H. Willford.*

† *Photograph by Mr. T. H. Newman, F.Z.S., M.B.O.U.*

ENGLISH TURTLE-DOVE.

(*Turtur Turtur*).

Habitat.—Western Palaeartic Region; Africa in winter as far south at least as Shoa, and Asia as far east as Yarkand.

Length.—About 11 inches. Shape, very well proportioned.

Colouring.—Adult male—Head, nape, wing-coverts, rump, and flanks, soft bluish grey. On each side of the neck a collar or large patch of black feathers with ashy-white edges. The back pale brown; lower back, rump, and upper tail-coverts brown, more or less ashy; chin nearly white, throat and breast vinous, changing into white on the under-parts. The wings are chiefly brown, each feather having a broad cinnamon edge, giving the wings a beautiful laced appearance; the quill feathers of the wings brown edged with a lighter shade; the centre tail feathers are brown, the remainder greyish black and white. The feet are red, the iris reddish brown, the skin round the eye red. The female is rather smaller than the male, and the plumage less bright and pure.

WILD LIFE.

This beautiful little dove is migratory, arriving in England early in May and leaving us again in September for Southern Europe and Africa. Two eggs are laid, the nest being built of twigs, generally in a pine or beech tree, seldom in a bare exposed situation. There are two or three broods in the season (which is from May to August), and the young ones are hatched in about 17 days. In its wild state the Turtle feeds on "corn of all kinds, and the seeds of coniferæ, alders, beech, and other trees." It is said even to eat acorns and small snails. Just before migration these doves gather in flocks in the open fields. Though common in England, this dove is rare in Scotland or Ireland.

LIFE IN CAPTIVITY.

My first pair of Turtles were bought in 1898, and a few weeks after I procured a second pair; these last were said to be "mouth reared," but though finer and older birds, they were never so tame as my first pair. These two birds were named "Jamie" and "Dot," and it was only some time afterwards that I found I had mistaken the cock for the hen. They were very tame, and the hen "Jamie" specially loved to nestle in my hand to be petted. They nested and laid eggs, but from various causes I never reared any young ones.

I often stood quite close to the nest, and one of the birds would come on my hand for a few hemp seeds, and when it had had its share would change places with the sitting bird in the nest, and let it come for its share of hemp too. They did it all very seriously, and it was very pretty to see the eager impatient look of the dove in the nest if the other seemed rather longer than usual, or taking more than its due share of hemp.

Once "Jamie" was very ill, she vomited some colourless fluid, and two days later laid a soft-shelled egg; a second one laid was quite normal. Dr. Greene considered that the Turtle-dove nested in captivity with more readiness than any of the English doves; but though he notes that the birds are good parents, yet when ready to nest again he found them very cruel to the first brood, driving them about and otherwise maltreating them.

The young birds of the year are browner than their parents, the rufous edgings to the wing feathers are broader and duller; there are no dark patches on the sides of the neck; the throat and breast are pale ash. I once saw a Turtle caught in Herefordshire, and was much struck with its general vinous shade as compared to my own birds. The cost of a pair of Turtle-doves is from 5/- to 7/6. These doves were first kept at the Zoo in 1863, and were bred there in 1878. A pair presented in May, 1880, were caught at sea, probably perching on the ship to rest when tired out.

THE BARBARY TURTLE-DOVE.

(*Turtur risorius*).

Habitat.—Southern Europe, Western Asia and various parts of Africa. It has so long been domesticated in England that its original habitat has become rather uncertain.

Length.—About 10 inches. Shape, rather long, but well proportioned.

Colouring.—General colour biscuit (though individual specimens vary, and some are quite a pale cream shade). The long wing quills, and rump and upper tail feathers are greyish drab. Under parts and under tail feathers white. Black collar, slightly edged with a narrow white line above, round the hinder neck. The beak lead colour, feet crimson, eyes rich orange-red. The hen is practically the same colour as the cock, but a little smaller in size and not so thickly built.

LIFE IN CAPTIVITY.

The Barbary or Laughing dove, so called from its peculiar coo, is so domesticated in England that little is known of its wild life, all specimens being aviary-bred in this country. It is a dove that is easy to keep, and to breed; also, it is long-lived, and will live happily either in an aviary or in an old soap box converted with a little wire netting into a cage. I have known some people, however, who

consider that if they keep Barbary doves the poor birds are certain to bring ill-luck to them. I do not know from what cause the suspicion arises, but I have met with it once or twice.

The affection towards each other between a pair of these doves is very great, though with others of his tribe the cock Barbary is apt to be quarrelsome, especially when nesting. He does not fight so much in the wing-striking manner usual in most dove battles, but charges the enemy in a series of hops, with lowered head, and a coo that is unmistakably a war-cry, and that as a rule strikes terror into the heart of his opponent. Barbary doves will get absurdly tame; they will let you handle them and change their eggs, and will yet go on sitting as if it was all part of the day's work. I have read of one bird that formed such an attachment to an old lady that it would regularly every day sit on a chair close to hers, and each afternoon both of them would take a nap. One day when the old lady awoke the bird was not on its chair, but nestling on her head in the folds of her cap, and was most reluctant to be removed, the cause being discovered when it was found the dove had laid an egg in what it evidently thought a very pretty nesting site.

I have noticed before that birds have curious ideas on this subject. We had a little pair of Cordon Bleus that were often let out for a fly in the room, and they were never tired of inspecting one of the gas globes and considering its possibility as a very suitable place for a nest.

Barbary doves are known to live to a great age. A gentleman at Brighton, in 1897, had then living a cock bird that he had had for 23 years, and that was adult when he first had it. Contrary to most of his kind, this particular dove was a confirmed old bachelor and refused all offers of a wife.

Once I had a flight of over 30 Barbary doves loose in the garden. I believe they were all bred from one pair, and they used to roost summer and winter in some large hawthorn trees near the house, quite despising a dovecote near by, save for one single nest built in it. Twice a day, regularly as clockwork, the birds would assemble at this place to be fed. They all began to draw together from different quarters as the feeding time drew near, and being very punctual, if the proper time came and their meal was a few minutes late, they would fly down to the orchard, where they knew they would probably find my bird-man working, to remind him, and escort him back in triumph to the feeding-place. The moment his steps tended in that direction the doves would leave the large Blenheim Orange apple-tree where they had been waiting and form a joyous advance-guard leading the way to the house.

After some time my little flock of doves began to decrease, till only one solitary bird was left. I fancy many were shot, as they were fond of doing mischief in some allotment gardens not far away; others were stolen, or killed by cats. We had one tragic instance from the latter cause. A pair of the Barbarys were nesting high up in the roosting tree during the winter—for these doves will nest all the year round—and the old cock, not satisfied with one wife, went off after another. A just retribution followed, the cock and the new hen being both killed by a cat the same night. I was very interested to know what the widowed hen would do, for in doves the parent birds divide the duties of sitting, the cock bird sitting on the eggs by day, the hen at night. The love of birds for their eggs or young is very strong, and this hen sat bravely on through the cold and snow, and ended in bringing off a fine young one.

Every spring I used to find deserted young doves in the garden, and a great trouble they were to me, for it is no use trying to get them adopted by other birds, for when the poor young nestlings run to a stranger for food their eagerness is only met by indifference or possibly blows. So like Pip in "Great Expectations" I had no course left but to try and bring them up "by hand," a not too pleasant task, and one that is not altogether satisfactory in the case of young foreign doves less hardy than Barbarys. These young doves are cream in colour, but have dark eyes (which gradually change to orange-red as they grow older), their beaks, feet, and legs are pale flesh-colour, and they at first have no black collar.

Barbarys are not worth breeding from a financial point of view; there is little demand for them, and you may think yourself fortunate if you can get 2/- for a pair. I once bred some beautiful hybrids between a cock British Turtle-dove (*Columba turtur*) and a hen Barbary, and after I had parted with one of these hybrids it bred again with another hybrid, a Barbary Necklace. I have only one stock pair of Barbarys now, and these I keep for foster parents, for sitting on the eggs of rarer doves that perhaps are bad sitters. Not that I have ever had much success from this plan, but it is pleasant to feel you have the birds there if an occasion *should* arise, for if you had *not* got them and failed you would be sure to think the failure was due to their absence.

If they were rarer one should value Barbary doves more, but to a true bird lover mere rarity does not matter, and these doves are so pretty and confiding—flying readily on your hand for crumbs of biscuit, and letting you stroke them—that they are a pleasure to keep as pets.

When her late Gracious Majesty Queen Victoria

visited Dublin in 1849, as the procession passed under an arch in Eccles Street, a dove was lowered into the Royal carriage. The Queen took the bird gently in her hand and placed it beside her, amidst loud cheers from the large crowd.

One more point about the Barbary and I must pass on to another kind. It is an interesting explanation I once read of that well-known verse in the Psalms so fascinating in its imagery and yet at the same time apparently hard to understand. "Though ye have lien among the pots, yet shall ye be as the wings of a dove that is covered with silver wings, and her feathers like gold." In Eastern countries the house roofs are flat, and all the rubbish of the house and broken pots—that we should dispose of right away—are still carried up and emptied on the house roof, and here the semi-wild Barbary doves settle in flocks to find any stray bits of food. Suddenly a noise startles them, and they rise and swirl upwards, their feathers looking first white as silver against the deep blue sky, then changing to gold as they catch the sun's rays. Now read the verse again and you will understand what David meant when he took this little scene from everyday bird life as the rising of a soul from the darkness of sin into light.

THE HALF-COLLARED TURTLE.

(*Turtur semitorquatus*).

Habitat.—Inhabits Africa from about 14 latitude southward. Common at East Soudan and other parts of South Africa.

Length.—About 12 inches. Shape, very fine, and strong-looking.

Colouring.—General colour a rich vinous, pinker on the breast and shading on the wings and back to a browner tint. The forehead is whitish grey, this being more distinct in the cock than in the hen. A broad black collar, very narrowly edged with grey above and below, encircles the hinder part of the neck. The eyes are orange-red, the eyelids red. The bill is black and the feet red. The sexes are very similar in colouring, but the forehead is not so white in the hen as in the cock.

WILD LIFE.

Dr. Butler tells us it nests in the forks of Acacias or silk trees during and after the rainy season; it feeds on berries, grain, small seeds, and stone fruits. Mr. Robin Kemp found it resident throughout the year and very common in South Eastern Sierra Leone. It assembled in flocks of from 30 to 40 birds.

LIFE IN CAPTIVITY.

The Half-Collared Turtle is a very fine, well-shaped dove, but being large in size it does not do in a small space. The colouring is very rich, and a bird in good plumage is very handsome, the red eye seeming just the touch of colour needed to complete the harmony of the whole. It is a hardy bird, and has often been bred in England. The eggs are two in number, large and white, and they hatch out in the short period of 12 days. The young birds are very much the colouring of the parents, but considerably duller, and lack the black collar and the red eye. The hairy down, so mixed with the feathers in some young doves, is very conspicuous in this species.

In March, 1902, I had a pair of these birds sent me direct from Africa. They began to nest in May of the same year and bred many times. When first I had them they were excellent parents and good sitters, but later they failed to rear their young ones so successfully. I parted with them, and I believe they did just as well in their new home; probably they had hardly sufficient space when with me.

I found these doves a strange mixture of boldness and timidity. They were constantly driven about the aviary by a dove much their inferior in size, and yet on the other hand they boldly beat off with their wings my old Masked Parrakeet, "Jack," when he was climbing up to inspect their nest, and he retired very discomfited. I have found it does not answer to try and keep the parrot tribe and nesting doves together. Amongst parrots and parrakeets I have had three different birds that were all egg-eaters or egg-destroyers, and in one case I caught a parrakeet in the act of eating a fat young Picui dove which it had robbed from the nest.

My young Half-Collareds were some of them very wild, and would dash about the aviary unless great care was used. This is not a rare dove, about 12/6 to 15/- will buy a pair, but it does not seem imported very regularly. It was first kept at the Zoo in 1870, and later bred there. In 1907 some Half-Collareds were included amongst the five kinds of doves that were liberated in the Gardens as an experiment, to see if they would settle and breed there, but I do not know if this particular kind did well or not.

When sitting my birds were very devoted to each other, and the one not actually on the nest would keep guard over it continually. The birds were much tamer whilst nesting. I found very often only *one* egg was laid at a sitting, but I do not know if this is the general rule or not. They were anxious to nest all the year round, and the

hen still went on laying after the nest pans were cut down for the winter.

THE DECEPTIVE TURTLE-DOVE.

(*Turtur Decipiens*).

Habitat.—East Africa from Dongola to the Zambesi.

Length.—About 12 inches. Shape, rather like a Barbary.

Colouring.—Adult male—Upper parts pale earthy brown, slightly reddish, anterior part of head above ashy, changing into vinous on the hind part and nape. On the hind neck a broad black collar, edged above with ashy white. Upper breast a beautiful vinous, chin and throat whitish, under parts whitish, but grey on under tail coverts and lead grey on flanks. The tail is grey or brownish, earthy-brown in the centre, some of the feathers having narrow white tips. The iris is buffy orange, the bare skin round the eye grey tinged with pink, feet carmine, bill black.

WILD LIFE.

This dove in various forms has a wide range over Africa. One writer says of it that it is quite one of the commonest doves in the Soudan, and that it keeps much to the vicinity of the rivers. It builds in the Acacia bushes, and the nest is lightly built of twigs. One form of this dove was so common and clustered so thickly on the trees that five or six might be killed with one cartridge. The pigeons were great drinkers, and the flocks used to come down to the river morning and evening. When they returned at night "they would rise to a great height, and circling round, plunge down headlong, like our wood pigeons, into the trees used as roosting places."

LIFE IN CAPTIVITY.

The same consignment of doves that brought me my Tambourine doves and others from Africa, in March, 1902, also included four Deceptive Turtle-doves. Two of these I had the misfortune to lose. The two others I kept until 1905, when I parted with them. They were very handsome birds, but very nervous, and one of the surviving two twice had a fit. The first fit was brought on by fright at the sight of a Long-tailed Glossy Starling; perhaps its formidable tail may have caused the dove to be alarmed. It flew against the wires very badly, and rolled over and over on the ground, and then went quite stiff. I dashed cold water on it, and afterwards put it in a darkened cage. Later on it had a second seizure, but was all right by night. Nor to my knowledge did it ever have another fit afterwards.

This dove has a most peculiar coo, it is scarcely like the note of a bird and is more like a scream from a cat. Mr. Newman (who later owned my two birds) noted that this particular call was used by both sexes, and was generally made when the bird alighted on a bough, or was about to attack an enemy, or sometimes when on the wing. The other call, as when the cock was attracting the hen, or when he was in the nest calling her, was quite a different sound. My birds proved to be two cocks, but fortunately Mr. Newman was able in 1906 and 1907 to procure two hens. These birds came from Kordofan, and formed part of a collection of African birds gathered from the White Nile for the Girza Zoological Gardens, Cairo. The birds nested often, but failed time after time to raise their young to maturity, that grave fault in doves—neglect before the young can do for themselves—being the entire cause. The nest was made of a thick mass of twigs, so high that some of the twigs had to be cleared away to prevent the eggs rolling off.

I have several times known doves do this or even pile up another layer of material over the eggs, and lay a fresh clutch on the top. The eggs of the Deceptive Turtle-dove "are rather small for the size of the bird, pure white, rather glossy and round, though three laid in 1908 are rather larger and longer in shape. The eggs generally hatch on the 13th, sometimes on the 14th day after the second egg is laid." I cannot find a record of this dove being kept at the Zoological Gardens. I have only kept it this single time when it was sent over by a friend. I have never known it offered for sale.

You will notice in the description of this dove that the feet are carmine. There is no exception to this rule in any dove that I know—I mean that the feet and legs are *some* shade of red or crimson. It may range from crimson purple to the faintest flesh colour, but it is always a variation of the same shade. The Arabs have an old legend to account for this. They say that the first time the Dove returned to the Ark it bore the olive branch, but gave no other sign of the state of the earth; but on its second visit its feet were covered with red mud, clearly showing it had walked on *earth* already freed from the water. To record the event Noah prayed that the feet of these birds might ever continue red colour, and his prayer was granted.

THE DAMARA TURTLE-DOVE.

(*Turtur Damarensis*).

Habitat.—Angola, Damaraland and East Africa, from Transvaal to Mount Eglon, and also the Comoro Islands and Madagascar.

Length.—About 10 inches. Shape very like a Barbary dove, but more slender.

Colouring.—Breast, throat and back of neck palest shade of purple-pink. Top of head grey, forehead and chin white, tail greyish brown, back olive drab, shading into soft grey on shoulders. Long wing quills blackish edged with fawn; under parts and outer tail feathers white. Black collar (with narrow white edges) round hinder part of neck. Beak dark slate, feet dark crimson, iris full and very dark brown, nearly black. The general colouring is *very* pale, giving the bird the look of a Barbary dove, but greyer, smaller, and with dark eyes instead of orange-red ones.

WILD LIFE.

This pretty dove is the most common dove in Damaraland and the country round about. It is said not to be strictly gregarious, but we are told "numbers are often found in close proximity both on trees and on the ground, and rise in one flock when flushed, producing a great noise by the rapid concussion of their wings above their backs." "They seek on the ground for their food, which consists almost exclusively of seeds. They build in small trees, generally at the extremity of a bough, constructing a nest of a few twigs, with no lining of any kind. The eggs are two in number, of a pure white. I have observed these doves building on August 20th, and have found their eggs abundant at the end of December, so that it is probable they produce two broods in the year" (from "The Birds of Damaraland").

Mr. Swynnerton, on the birds of Gazaland, Southern Rhodesia, tells us: "This is the common dove of the mountains, is found in considerable numbers in the neighbourhood of Kaffir kraals and homesteads. It is extremely tame, and the individuals frequenting my gum-trees come readily to any food which may be thrown down. The call resembles the syllables 'Ku-koro! ku-koro!' often repeated, the middle one long drawn. The birds in my aviary frequently call at night."

The same writer notes how he heard one of these doves calling repeatedly in the open bush (in the Umtali district) in the dead of night. He further adds, "A curious courtship through the wires took place during July and August between a wild bird and one that had been in my aviary many months. In the low veldt I noticed this dove in some numbers between Chimbuya and the Umtefu, and again at Bimbo and Inyamita."

LIFE IN CAPTIVITY.

In March, 1902, I received a consignment of doves from a friend in Africa. Amongst them were four doves that proved to be Damara turtles; three, I believe, were cocks, the fourth a hen. I think it must be this dove that the late Mr. O. E. Cresswell wrote of in *The Avicultural Magazine* for 1896. He says, "There is a Dove largely imported from Africa and sold under many names. In plumage it is almost identical with the Barbary turtle, though the neck ring is rather thicker at the back and does not come quite so far forward. In size it is slightly less, but the real distinction is in the eye, which is large and entirely dark, instead of having the brilliant red iris of the Barbary turtle."

My pair of Damara turtles began to nest soon after they came to me; this nest was only the first of many, The hen laid clutch after clutch of eggs, and sat well, but continually something happened to the young birds, for as a rule the eggs were always fertile; some few were broken, but generally they hatched out and the young birds died from neglect (after leaving the nest) as much as from any other cause.

Hand-feeding was tried, but without success. The young ones were very pretty, gentle-looking little things, much more graceful than the generality of young doves. Their colouring was as follows:—Back dark grey, tail drab brown (darker than the back), light fawn edges to the long wing quills. Forehead and throat whitish, shading into grey pink on top of head and breast; under parts white, collar black, beak slate, feet flesh colour, iris dark brown; the drab on the back shading into grey on the shoulders, as in the adult birds.

Though so gentle-looking, this dove is not always very amiable. About a year after they came I had to remove my birds from the aviary they were in because they were so tiresome to the other inmates; later on the Damaras were in their turn disturbed by some Senegal doves. One of my young Damara turtles was murdered by a bad-tempered Necklace dove who had a great dislike to the old birds. This is the only instance I have known where a dove has extended its hate of another bird to its helpless young ones; the poor little bird, strong and healthy and just out of the nest, was really pecked to death. I have never seen this dove offered for sale, so I do not know its value. I sold my last two, however, for a few shillings, though doubtless they were worth much more; but in those days very little interest was taken in keeping doves in England.

DWARF OR RUDDY TURTLE.

(*Turtur humilis*).

Habitat.—North-East India. From Cachar through Burmah to the Andamans, and eastward to Cochinchina, China, and the Philippine Islands.

Length.—About 9 inches. Shape, long, but beautifully proportioned.

Colouring.—The adult male is vinous or brick-red; the back, rump, upper tail coverts, under wing coverts, and flanks grey. The head is a very lovely shade of pale ash grey, a rich black collar round the hinder part of the neck dividing the grey from the red. The long wing quills are blackish, the eye dark brown, the bill black, the legs and feet purplish red. The hen is quite different to the male bird. Her general colour is soft dun, the lower parts vinous grey. There is a black collar as in the cock, but edged above with whitish grey.

WILD LIFE.

This dove feeds largely on the ground, either in open fields or under the shade of the trees. It frequents large groves in cultivated districts, and

DWARF OR RUDDY TURTLE.

Photo by Mr. D. Seth-Smith.
From The Avicultural Magazine.

is frequently caught and offered for sale in India, but seldom finds its way to England, most of those for disposal being aviary-bred. It is very difficult to approach in its wild state, and keeps to the tree and bamboo jungle.

LIFE IN CAPTIVITY.

The little Dwarf turtle is quite one of the nicest doves to keep. It is so small and dainty, and the colouring very charming. Imagine a trim little dove with a soft grey head, a black collar, and warm brick-coloured body, with black wing quills and whitish grey tail, and there you have a cock bird; and the hen is no less pretty with her plumage of real "dove colour" and soft dark eyes.

It is such an advantage to be able to tell the sexes easily, for as a rule doves are so much alike that it is only after years that one can single out the sex of a bird with fair certainty, and even then there is sometimes a little doubt, for one may be misled by the birds themselves. I remember two Bleeding Heart pigeons that for long took me in by their loving ways to each other, and at last I found to my surprise that they were both cocks.

The Ruddy Turtle was first kept at the Zoo in 1862, and two years later it bred there. It is an easy dove to breed so far, but not so easy to rear the young ones to maturity; there is a world of difference in getting doves to nest and getting them to rear the young successfully. A large consignment of Dwarf turtles was received at Cologne in 1895; I have never known any quantity offered for sale in England.

For some time I had to be content with two cocks for which I paid about 8/- each; it seemed no use hoping for a hen, for the natives did not seem to send any over. But after waiting for some time my chance came; a gentleman returning from India brought back four hen birds, and wrote offering me them for 15/- each. I bought two, and the other two birds were each sold to a different owner. Out of the four hen birds only one (one of mine), I believe, survived for long; the other three died. So now it rested with my one little hen to restore the breed of the Ruddy Turtle in England, for I did not know of a single other hen bird at that time in the country. My birds soon nested and had some young ones, which I hoped at first were hens, but I was doomed to disappointment—they were all cocks.

When the little doves are almost ready to leave the nest they are very pretty indeed, so small and innocent-looking, dun colour, like the hen, with white foreheads, but without the black collar, and with bright dark eyes, and light-coloured beaks, like very pale flesh colour. After a time the collar comes, but if the young bird is a cock the change of colour in the plumage does not come till long after the dark ring band has appeared.

Eventually I bred a hen bird, so having a second cock I had now two unrelated pairs. From these I was able to supply young birds to aviculturalists all over the country; these birds in turn bred again, and the Dwarf turtle is once more established in England, much to my pleasure.

The eggs are white and two in number. Latterly the two pairs of birds I have now have not bred so many young ones as they should have done. The young birds do well till just out of the nest, when the parents desert them, and probably wish to start another nest again. In this case it is little one can do for them, and the poor little things get weaker and eventually die. This dove seems to stand our climate well, and does not appear to feel the cold. It breeds many times during the year,

and I am inclined to think would nest nearly all the year round if permitted. The colouring of the young cocks is only very gradual, but should show definitely by the end of the nesting season.

There is one point in the nesting of the Dwarf turtles that I have not noticed in any other doves, and that is the frequency of both birds leaving the eggs whilst sitting. Time after time I have seen both birds off the nest when I have known that they have eggs, and yet the eggs almost invariably hatch; it is quite the exception for them not to do so. The eggs are small and white and rounded at both ends.

In accident or illness the Ruddy Turtle is one of the bravest little birds I know. Once a cock bird that I still have almost scalped himself against the wires—the top of his head was a terrible sight, not merely grazed, but bleeding very badly. I painted the wound (after bathing it) with "New Skin," which is a *liquid* court plaister. It is a most excellent remedy, but for a few moments after being applied smarts most painfully, though afterwards the feeling is a very soothing one. I held the little dove all the time in my hand (till the painting was dry) and he scarcely flinched and never cried out, though the pain must have been very great. The large wound healed splendidly, and to look at the bird now you could not tell he had ever received an injury, for the feathering on his head is perfect.

NECKLACED DOVE.

(*Turtur Tigrinus*).

Habitat.—Burma, Malay, Peninsula, Sunda Islands, as far south as Timor, and the Moluccas, where most likely it is found only during the winter.

Length.—About 11 inches. Shape, rather long, but not too slender.

Colouring.—Adult male—Head vinous grey, greyer on cheeks and forehead. The back is dark brown, each feather being tipped with a buff spot; round the back of the neck is a very broad black collar all spotted over with tiny white dots. The chin and centre of throat white, while the breast is dull vinous, becoming paler on the under parts. The feet reddish flesh-coloured, bill black, iris reddish pearl. The long tail black, white, and grey. The female is similar to the male, but smaller and slighter.

WILD LIFE.

Mr. Oates writes of the Malayan Spotted Dove (which is very much akin to the Necklace, and is sometimes sold as the latter bird) that it is "extremely abundant over the whole province (of Burmah). This familiar dove is met with in all the open and cultivated parts of the province, and also in small numbers in forests and dense jungles; it does not, however, ascend the higher hills. It feeds entirely on the ground, on seeds and grain." "It breeds almost all the year round, but chiefly from August to March, making a flimsy nest of twigs in low trees, bushes and bamboos, and laying two eggs."

In "The Birds of Celebes" we are told, "This species is kept in cages, and much loved as a pet in Sumatra and in the Malay Peninsula; in the former country it is regarded as something almost sacred, and absurdly high prices are demanded for specimens, but Hagen seems to have found that they were treated with less reverence in East Sumatra, the males being kept for fighting purposes."

Davidson, writing from Tenasserim, describes it as resorting to gardens, fields, grassy lands, in fact wherever the country is open, sometimes singly, sometimes in pairs, small flocks or hundreds. It feeds on seeds, rice, and other grains.

LIFE IN CAPTIVITY.

This beautiful dove is also known in Germany by the name of the Pearl-necked Dove. In the year 1898, at the Palace Show, I bought my first pair of Necklaces for 15/-. They were supposed to be a pair, but I am not at all sure that the cock was not a near ally of the Necklace dove, namely, the Spotted Turtle.

He was the most beautiful bird of his kind I have ever seen, and his eyes, instead of being orange, were a rich ruby red, and the buff markings on his wings were much more like "spots," being very round and distinct. When he puffed out his neck to coo his fine collar looked almost like a ruff. Amongst the many young ones I bred none equalled the old cock in his markings. He was sold to me as a Necklaced, *not* a Spotted dove, and was said to be an imported specimen from Burmah.

My hen was a most excellent breeding bird, and I reared eight young birds in about a year, and should have had many more (for there were 10 or 11 nests), but so many eggs were broken, and some of the young ones hatched only to be forsaken. Of course it was very foolish to let my birds nest so often, but these doves were amongst my very first birds, and I was very ignorant, having then had next to no experience in keeping doves.

The Necklaces were very gentle and would never fight unless attacked first. The hen laid eggs regularly every few weeks, and if some disaster happened to them two more would be laid within the next few days. I remember they nested at first

in the shelter, and carried up dried heather continually. I suppose I was probably too shy of disturbing them to inspect what the birds were really after; anyhow, it was not until some time later that I found the birds had piled up quite a pyramid of heather, with eggs laid at intervals in the pile. Evidently they had made one nest and laid, then tempted at seeing fresh heather had added more on the top of the eggs and laid again, and repeated this foolishness until I discovered it.

The Necklaces nested under great difficulties, for they had two persistent enemies—first the Crested doves, and later the Auritas. The first-named kept taking the nests from the Necklaces and sitting upon the eggs, the rightful owners being powerless to resist, so that at last I was obliged to take the intruders away to another aviary. The cock Aurita had another method of torment: he would hide regularly in the shelter, and when the Necklaces, but particularly the cock, came down to feed, he would dart out and drive them off, and then retire to his hiding-place to await his next opportunity. This happened so often and interfered so with the rearing of the young birds that I was driven to placing food and water in the spare nest pans close to the Necklaces' nest; they were very grateful, and the cock began to feed at once. The Aurita then changed his plans, and grew bold enough to try and attack the nest itself, but being a coward as well as a bully he was no match for the old cock on the higher level.

It really was amusing (because no harm ever came of it) to watch the cock Necklace guarding the hen on the nest, never taking his eyes off his enemy, who would come creeping up to him through the branches. Suddenly there would be a raising of wings, a sharp interchange of blows, and the Aurita would invariably fly off discomfited, leaving the victor triumphant.

The young Necklace doves have grey heads, pale vinaceous breasts, the rest of the plumage brown with faint lighter spots on the wings; they have no checked neck collar at first. Although on the whole the old birds were excellent parents, yet they failed to rear their young ones many times. I have known the hen ill-treat one of her own young ones till I had to take the poor little thing away; and again, if there were two young ones, the parents would possibly feed one and neglect the other. There is as much difference of character in birds as in human beings, and a bird, however ugly, that is a good nesting bird is invaluable. Such a bird is my hen Aurita that I have already told you of.

I once bred some beautiful Necklace Senegal hybrids; they were very handsome birds. Now I have no Necklaces, but I sometimes think I will keep them again. Several were recently let out loose into the Zoo grounds as an experiment to see if they would breed there, but I do not know how they thrived. The Necklace dove was kept at the Gardens in 1884; its value is 12/6 to 15/- a pair, and it is imported fairly often and does not seem affected by the cold, but should not be allowed to nest in winter, or the hens may die from egg-binding.

SENEGAL TURTLE-DOVE.

(*Turtur Senegalensis*).

Habitat.—The whole of the African Continent, Secotra, common on the Orange River and Grand Namaqualand, Senegal, and the Canary Islands.

Length.—About 11 inches. Shape, medium build, well proportioned.

Colouring.—The head, neck, and breast a soft vinous, almost red-brick; the underparts white, the lower back and wings ash grey; the back is a blending of the grey and vinous; the tail black, white and grey; the bill dusky black, with a slight vinous shade; the iris orange-red, the legs pinkish-red. The hen is somewhat smaller and duller in colouring; both birds have round the front and sides of the neck a collar of small black checks. It is unusual in doves to find the collar in this position—it is generally round the *back* of the neck, not the front.

WILD LIFE.

The Senegal dove seems to prefer the haunts of man to the wilder parts, for it breeds not only in trees and hedges, but in rafters, walls, ruins and churches, and in the midst of towns and villages. It is found in the Mimosa bush along the Tugela, and Captain Horsburgh says it is very common about Bloemfontein, and is generally seen singly. It breeds almost all the year round, the nest being made of twigs and roots, like most other doves' nests. The eggs are white and two generally laid at a sitting.

LIFE IN CAPTIVITY.

The Senegal is one of the most popular of doves to keep in an aviary, for it is hardy, not too large, and breeds freely, besides being very pretty. But it has two bad faults—it is not always good-tempered to other doves whilst it is nesting—I have even known it turn on one of its own young ones, plucking and beating it—and it is given to laying eggs and then after a time deserting them, probably with the desire to nest again.

The colouring of the Senegal varies very much according to the district the birds come from. Some birds are larger than others, and in these the red shade prevails over the grey. The smaller and

greyer birds, I consider, are prettier and more dainty. The young birds are also grey and vinous, but the colours are not so bright as in the adult birds, and the checked collar is at first lacking. If allowed, the Senegal dove would probably nest all the year round, the same as the Barbary.

The Senegal was first bred at the Zoo in 1861, and in 1907 some were liberated as an experiment in the Gardens, and I am told have done very well, and settled down and nested. I have seen single cock birds offered for as little as 2/6 each, but the proper price is 12/6 to 15/- for a good adult pair. I believe I gave 20/- for my pair in 1901, but this was through ignorance of their value, and possibly they were not as common then as now. The Senegal is hardy and stands the cold well.

CHAPTER VI.

GROUND DOVES.

The Bar-shouldered Dove.
,, Peaceful Dove.
,, Zebra Dove.
,, Diamond Dove.
,, Scaly Dove.
,, Picui Dove.
,, Passerine Dove.
,, Talpacoti (or Cinnamon) Dove.

BAR-SHOULDERED DOVE.

(*Geopelia humeralis*).

Habitat.—Australia (except the south-west), and Southern New Guinea.

Length.—11 inches. Shape, long and graceful.

Colouring.—The head (except the back of the neck) and upper breast, pale ash grey. The back of the neck has a very deep collar of red-brown, every feather being tipped with black, giving the bird a scaled appearance. The back wing coverts, rump and upper tail coverts pale brown tipped with black; the lower breast and under-tail coverts pale lilac-vinous. The eye is pale straw-colour, the bare skin round it nearly purple, the bill slate, the nostrils light blue, the legs and feet pink-red. The hen is usually smaller than the male, and more slender in build; the grey on the breast is darker and duller.

WILD LIFE.

The Bar-shouldered dove frequents the ground more than the trees, as it feeds largely on the seeds of numerous grasses. Gould tells us that when in Australia he found this dove so tame that it would sometimes perch within two yards of where he was sitting; he adds, however, that thirst and the scant supply of water may have made it bolder than usual. This dove breeds in its wild state in August, making a nest of thin twigs on the lower leaves of Pandanus. In a recent work on "The Nests and Eggs of Australia," Mr. Campbell tells us that the Bar-shouldered dove prefers the wooded and scrubby localities, and that when cooked it is delicious eating, especially when hashed with sweet potatoes.

LIFE IN CAPTIVITY.

The Bar-shouldered dove is a very handsome bird, long and elegant in shape, and with very attractive markings, but it is a bird that has a bad character for being very quarrelsome with its own tribe, one writer, from his own experience, going so far as to say he considers it unsafe to keep with other doves.

It seems to vary much in size. Dr. Butler had two male birds, and one was much larger than the other, the former bird proving a great tyrant to all the other doves. In my own case I have had three birds in all, one cock and two hens, and both the hens were much smaller than the cock. Two of these birds were sent me direct from Australia; they arrived in very bad condition, and you cannot wonder when I tell you that the travelling box they were shipped in was only about 17 inches square and also contained, *besides* the Bar-shouldereds, a large Fruit pigeon and a Blue Bonnet parrakeet.

The butcher who had charge of them, being evidently a kind and sensible man, took on himself to separate the birds on the voyage, but they were sent by rail on reaching England, in the original box cage. The parrakeet and the large pigeon had not suffered, but the poor Bar-shouldereds had both been injured. The cock, a very fine bird, had a wound over one eye that never properly healed all the time I had him, whilst the hen was a most horrible sight, one side of her face being completely sliced off, the eyesight on that side of course being destroyed.

It was evidently not a new wound, and I should say had been done when first the birds started before the butcher parted them. How anyone could be so cruel as to send four birds a long voyage in such a confined space I do not know; but I think some people think a bird or animal can bear anything and yet live.

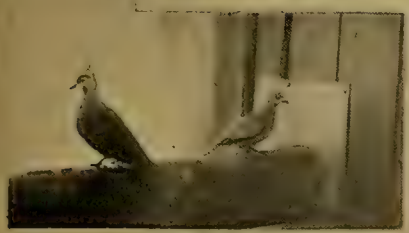
The poor little hen only lived a few weeks, and I really was glad she died. Meantime the cock had got into trouble. He raised his wing in a striking attitude at a little Conure, and the latter gave one snap in return at the dove's leg and broke it high up in the thigh. I was in the aviary at the time, and, with the help of my birdman, we set the leg with a splint and some cottonwool and thread. We dressed it often, and were rewarded

PLATE 8.

1

2

3



4

5

6

*1, †2 AND *3.—DIAMOND DOVES. 4.—PICUI AND PLUMED GROUND DOVE.
5.—PICUI DOVE. *6.—PASSERINE DOVE.

* *Photographs by Mr. H. Willford.* † *Photograph by Mr. D. Seth-Smith, F.Z.S., M.B.O.U*

by the leg knitting together splendidly, so that beyond a slight limp the injury was not permanent. After the hen died the cock pined very much, and was overjoyed when I presented him with a new wife. I was never fortunate enough to rear any young ones, and found the cockbird so quarrelsome that finally I was glad to give both birds away.

The male bird had a most peculiar coo that after a time became rather irritating, and earned for him the nickname of the "Popple-wock" dove. The late Mr. Cresswell tells us how he had a cock Bar-shouldered dove seven years, and the bird would "cuckoo" to order. It even deceived the real Cuckoos who would fly close to the aviary, and once being heard by some workmen half-a-mile away (who were working on a much lower level than the aviary), the report got spread, and even into a London paper, that the cuckoo had been heard in Herefordshire at an extraordinary time of the year. After the cock's death the hen started to "cuckoo," though she had rarely if ever done so before, and would answer the cuckoo's call.

The Bar-shouldered is a very handsome dove, but its bad temper and trying coo, which Dr. Butler not untruly describes as "an impudent conceited sound," considerably lessens its attractiveness as an aviary pet. It was first kept in the Zoo in May, 1868, and bred there in July of the same year, and many times since. The value per pair is hard to say, but it is a dove not often offered for sale, nor is there apparently much demand for it.

Mr. Cresswell's cock made nests and sat on them, but whilst his first hen was alive no eggs were laid, and the cock even went so far as to destroy other birds' eggs and nests and hinder them from breeding. A new hen was got to put with the cock into another aviary, and here within ten days the hen had laid and was sitting well. In his notes a year later Mr. Cresswell tells us how the Bar-shouldered doves had failed to make their nesting a success. Every year they hatched about five pairs and always deserted the young birds when they were about a fortnight old. The only one that was reared was brought up under some Barbary doves as foster parents.

Dr. Butler gives a most interesting description of the courting postures of the cock Bar-shouldered dove. He says when the ordinary bowing and chasing seemed to leave the female indifferent, the cock "suddenly turned his back on her, raised his head to its highest elevation, spread his tail fanwise so that it swept the earth, and ran forward two or three steps, with a short sharp guttural sound, then looked over his shoulder and repeated the action perhaps a dozen times. His rage when she ignored all his efforts was unbounded, and he then commenced a system of tyrannous persecution, varied with occasional fondlings, which bade fair to reduce her to a scarecrow."

The most general way for the Geopelia species to show off to the hen is to bow almost to the ground, at the same time drooping the wings, and raising and spreading the tail like a fan. I once saw my own cock go through a most curious performance: he put down his head till his beak touched the wooden shelf he was standing on, and then rubbed the beak about, making a noise at the same time like a toy wind-up mouse. He was a fine bird, but a great bully, keeping the Auritas and Madagascars (who are also rather tyrants), and needless to say his own wife, in order. I was really glad when a friend kindly took him, in spite of his beauty.

THE PEACEFUL DOVE.

(*Geopelia tranquilla*).

Habitat.—Australia.

Length.—8¾ inches. Shape, slender and elegant.

Colouring.—Adult male—Forehead, cheeks, and throat grey, the occiput, back and wings ashy brown; the breast, sides, and back of neck grey; abdomen and flanks vinous. As in the Zebra dove, this bird is covered with tiny black lines, giving it a striped or barred appearance. These bars extend *right across* the upper breast, whereas in the Zebra they extend only across the sides of it. The bill and orbits are bright greyish blue, the iris of the eye bright ash grey, and the legs greenish grey in front, redder behind.

WILD LIFE.

Gould says this dove is "chiefly observed on the ground, feeding on the seeds of various plants under the shelter of thinly-timbered forests bordering plains." Campbell tells us that the Peaceful doves fed close to the camp, and that the nest is composed of twigs, rootlets, and fine dry grass.

Captain Sturt calls this dove the "Ventriloquist." He says "it frequents the banks of the Darling and the Murray, but is not so common as Geopelia cuneata (the Diamond Dove). I first found it on the marshes of the Macquarie, but could not see it. The fact is that it has the power of throwing its voice to a distance, and I mistook it for some time for the note of a large bird on the plains, and sent a man with a gun more than once to shoot it, but without success. At last, as Mr. Hume and I were one day sitting under a tree on the Bogan Creek, between the Macquarie and the Darling, we heard a note, and I sent my man

Frazer to try once more if he could discover what bird it was, when, in looking up into the tree under which we were sitting we saw one of these little doves, and ascertained from the movement of its throat that the sound proceeded from it, although it still fell on our ears as if it had been some large bird upon the plain."

LIFE IN CAPTIVITY.

The Peaceful Dove is a quiet little bird, very different in character to the Zebra Dove, though so like it in appearance.

You will notice the chief points of difference are that in the Peaceful the black bars extend *right across* the breast, and the bill and eye are a different colour, also the back of the head is not so red as in the Zebra. Dr. Butler found the Peaceful doves quiet to the verge of dulness; they never left their branch except to feed, and then only ate sparingly. He considered the hens more delicate than the cocks. In another aviary I have read of a pair of Peaceful doves being forced to give up their nest to a little hen Pileated Finch, who forthwith took possession of it and started to incubate the eggs, sitting so closely that she could almost be touched without taking alarm.

Mr. Astley bred the Peaceful dove in Italy most successfully, no less than four broods appearing in seven months, besides another clutch of eggs that failed to hatch. The nest was built in a covered box, partly open at one side, and entirely so underneath; inside this was fixed a bunch of heather, and the nest (of hay) was built on it. When first the young birds were hatched they were covered with fawn-coloured down, and on leaving the nest had a *very* spotted appearance, the feathers being spotted with cream-buff, and these again having a little bar, or spot, of *dark* brown; the general colour of the young birds was a "dull mouse brown." There was no pink on the breast, nor bluish and pale pink round the eyes as in the adult bird. The eggs were about 13 days in incubating.

This dove was kept at the Zoo as far back as 1868, but I do not know if it has ever been bred there. The value of the Peaceful dove is about 10/- per pair. It should be taken indoors in winter, as it does not stand extreme cold well.

ZEBRA DOVE.
(*Geopelia striata*).

Habitat.—South Tenasserim, Malay Peninsula, Indo-Malayan Archipelago, and from the Philippines southward to Lombock, the Celebes and Amboyna. It has been introduced into the Seychelles, Madagascar, Mauritius, Round Island, Réunion, and St. Helena.

Length.—Rather over 8 inches. Build, graceful and slender.

Colouring.—Adult male—Front of the head, cheeks and throat ashy grey, hind part of crown and occiput reddish, the principal part of the body brown or brownish grey, barred with narrow black lines; these, however, are not over the centre of the breast, which is pale vinous. The abdomen and under-tail coverts buffy-white, the sides and flanks ditto, but with narrow black bands; the iris brown, the bill black, the feet purple. The female is rather smaller than the male, and less reddish on the occiput.

WILD LIFE.

A gentleman who had visited Mahē, the largest island of the Seychelles group, writes of the Zebra doves, that they "abound on the estate, and come every afternoon to be fed with rice." He adds that the doves are "ridiculously tame, for 'wild birds,' and when we sat in the verandah they would often perch on our shoulders or walk over our books."

LIFE IN CAPTIVITY.

The Zebra dove was at one time one of the commonest of imported doves, and could be bought for as little as 4/6 a pair, but of late years it has not been offered for sale so frequently. I once reared a young one of either this species or the Peaceful dove, but before it was full grown it was killed by another bird. The cock Zebra looks very pretty when he coos, bowing to the ground and raising and spreading his tail like a fan. I cannot say, however, that either the Zebra dove or the Peaceful dove (which is so very like it) are great favourites of mine, partly because these small doves have a way—or rather the cocks have—of making themselves so disagreeable to others of the dove tribe that may be kept in the same aviary, and partly because the birds are liable to overgrown beaks in weak or old specimens; this, of course, means the beak must be clipped if the bird is not to starve, and clipping a beak is an operation I rather shrink from if possible—it is very much worse than cutting claws.

The late O. E. Cresswell, Esq., who kept the Zebra dove, found them wonderfully hardy for Indian birds; all the same, I think *all* tiny doves need protection in winter; they do not seem to have the vigour in them to withstand the cold as have the larger varieties. Mr. Cresswell says he never saw more devoted sitters or parents than the Zebras; they would defend their nest against birds four or five times their own size. Unfortunately this devotion to the young birds did not last, and nest after nest was lost through the old birds starting again before the young ones were able to do

for themselves and could do without the warmth of their parents. However, in great heat one or two young ones were reared annually.

Mr. Cresswell accounts for this neglect on the part of the old birds by the fact that having food provided and always at hand they are not fatigued and occupied in looking for it as in a state of nature, and so too readily desire to start breeding again at the expense of the young birds. They were not deserted till they were 16 to 20 days old, and would jump from the nest before they could fly (probably getting restless from hunger), and either from neglect or damp would go weak in the legs, dwindle and die.

One young one, who nearly died, recovered, and at six weeks old could not only care for itself, but fly as well as its parents.

Zebra doves were kept at the Zoo in 1863, and bred there in 1865. In one year 14 young ones were bred in the Girza Zoological Gardens, Cairo.

THE DIAMOND DOVE.

(*Geopelia cuneata*).

Habitat.—It is found generally throughout Australia (with the exception of Cape York and Rockingham Bay). One writer says he found this dove restricted to the middle regions of Australia, and its prinicipal habitat the basin of the Murray and its tributaries.

Length.—About 7½ inches, 4 of which compose the tail. Shape, long and slender.

Colouring.—In the male the head, neck and breast a soft ash grey, passing into white on the under parts. The nape and back mouse brown; the upper part of the wings darker grey and covered with tiny white spots. The naked skin round the eye and also the eye itself bright red (in some few specimens the eye and skin is yellowish green). The beak is olive brown, the feet reddish flesh-colour. In the female the white spots are larger than in the male, but she is a smaller bird and browner, not so grey as the cock.

WILD LIFE.

Mr. Gould's description of this dove in that old book, Dixon's "Dovecote and Aviary," is so pleasantly written that I cannot do better than quote it. He says: "Its natural food being the seeds of grasses and leguminous plants, it is observed more frequently on the ground than among trees. I sometimes met with it in small flocks, but more often in pairs or singly. It runs over the ground with a short bobbing motion of the tail, and while feeding is so remarkably tame as almost to admit of its being taken by the hand; and if forced to take wing it merely flies to the nearest trees, and there remains motionless among the branches until it again descends to the ground. I have not infrequently observed it close to the open door of the huts of the stock-keepers of the interior, who from it being so constantly before them regard it with little interest. The nest is a frail but beautiful structure formed of the stalks of a few flowering grasses, crossed and interwoven after the manner of other pigeons."

Captain Sturt tells us how the Diamond doves remained at the Depôt the greater part of the winter, and on one occasion roosted on his tent-ropes near a fire.

The Diamond dove lays two small white eggs. The young are very like their parents, but have fewer and smaller wing spots. After the first moult they are exactly like an adult bird in colour.

LIFE IN CAPTIVITY.

The Diamond dove is also known by the names of the Graceful, Ground, Speckled, and Red-eyed dove. It is deservedly popular amongst bird-lovers, for it is a sweet little dove and harmless in an aviary, though if several specimens are kept together they will fight amongst themselves. Some years ago the Diamond dove cost from 23/- up to 30/- a pair, now they can be had for about 10/-. A specimen was kept at the Zoo in 1868, and since then this dove has been kept and bred in many private aviaries. From two pairs of birds in one collection 13 young ones were bred in one season, and in Italy even more. It is recorded how one young hen, only 75 days old, nested, laying two eggs, one of which was fertile, but the nest was deserted before the young one was hatched. Dr. Greene states that though the eggs are laid it often happens that only one is fertile. The nest is a very fragile structure, and only about two inches in diameter. My own birds made a nest and sat in it steadily for many days, but as no eggs were laid I conclude the nest was just for "squatting" in. The cock Diamond dove looks very pretty when making love to the hen. He runs after her, raising and spreading his tail like a peacock, and bobbing up and down as he coos.

This dove is not hardy, and must be taken in during the colder months, say from October to May. It is as well to give it a secluded place to nest in, as being so defenceless its nest is easily destroyed if it is kept with mischievous birds such as Parson Finches and Weavers; yet, strange to say, a little cock Diamond dove I had (whose wings were injured so that it could not fly) was the greatest of friends with a cock Parson Finch, who was noted for being a bully in the aviary. These two would sit together, nestling side by side, the

Parson Finch talking in his own language to the dove all day long.

My first hen Diamond dove was bought in 1899, and cost me 10/6; after it moulted the feathers turned from grey to browny drab. I have noticed this changing also in the Picui dove—that after the moult the colour is often different. In 1900 I bought a fine cock Diamond, very dark grey, and the skin round the eye coral-red, but I never succeeded in rearing any young ones.

THE SCALY DOVE.

(*Scardafella squamosa*).

Habitat.—Brazil, Venezuela, and Columbia.

Length.—About 8 inches. Shape, slender, with long tail.

Colouring.—Adult male—Upper parts greyish brown; lower parts white, with a pinkish tinge on the sides and lower neck and also on the breast; each feather edged with a crescentic bar of black, except the under-tail coverts, which are pure white. The wings are light brown (also edged with black crescentic bars), the long quills brown; the tail is brown and black, the black feathers having broad white tips, the bill is brownish black, the feet flesh colour, the iris carmine red. The hen is similar to the cockbird.

WILD LIFE.

Mr. Taylor, in an article on Birds of the West Indies, tells us how the bush and savannah in the neighbourhood of Ciudad Bolivar swarm with little ground doves. Both the Scaly and the Talpacoti dove are found there, but the latter in more abundance than the former.

Mr. Forbes, whilst riding in Brazil, several times flushed little coveys of the Scaly dove, "which rose up from the road and took refuge in the nearest tree. Usually these parties consisted of about four; when rising they make, apparently with their wings, a curious rattling noise, whence they are called by the Brazilians 'Rôla Cascavel,' cascavel meaning a rattle, and being also the name applied by the natives to the Brazilian Rattlesnake."

LIFE IN CAPTIVITY.

I purchased a pair of these little doves in 1903. The price asked for the Scalys at first was 25/- a pair, but I fancy they did not sell very quickly. Eventually I gave 35/- for a pair each of Scaly and Cinnamon doves. The former are strange-looking little birds, something the shape of a Zebra dove, with a fairly long tail. Like the Zebra dove, too, the Scaly seems rather liable to suffer from an overgrown beak, and possibly not only overgrown, but twisted, for when one mandible gets longer than the other it is impossible for the two portions of the beak to fit properly in position.

Of all small operations to be performed on birds I think I find beak trimming the most unpleasant. In these two pairs of doves I have just mentioned two out of the four birds wanted their beaks cutting when I got them. Sometimes this overgrowth is a sign of weakness, sometimes of old age. At the present time I should not care to add any bird to my collection with this failing, for even when once cut the beak will grow long again.

I have not much to record about my own Scaly doves, for I did not much care for them nor even think them very pretty; but Dr. Greene in his "Notes on Cage Birds" is evidently a great admirer of this little dove, for he gives a long account of its nesting, besides praising its appearance. He speaks of it as quick and lively in its movements, ever on the alert, very quiet with other birds, and that it has a sonorous and really musical call—"Roo-koo-koo."

Dr. Greene considers the Scaly dove fairly hardy. He says the breeding season in England may be said to be from the middle of May; the hen arranges the nest, whilst the cock carries her up the material; incubation lasts 16 or 17 days, both birds sharing in the work of sitting and feeding. The young do well if the weather is warm and genial, but if cold and damp it is doubtful if they are reared. The young birds differ considerably from the old birds until after their first moult; their colour till then is a pale ashen-grey, very slightly marked with the "scaly" tips of the feathers, so marked a feature in the plumage of the old birds.

Dr. Greene says these doves in captivity live principally on white millet, with a little hemp and canary; they are fond of pecking about in the grass, and eat the tips of it and probably many minute insects at the same time.

The Scaly dove has been kept at the Zoo as far back as 1867. I believe it was bred in England for the first time quite recently. After keeping my pair of birds over a year I was still so little in love with them that I sold them for 8/6.

PICUI OR STEEL-BARRED DOVE.

(*Columbula Picui*).

Habitat.—South Brazil, Paraguay, Argentine, Chili, and Bolivia.

Length.—About 7 inches. Shape, very well proportioned.

Colouring.—General colour grey. Soft grey on back and head, shading into almost white on the face and breast. A steel-blue bar runs high up across the wing, but as this band is very dark it does not do much to lighten up the colour of the bird. The feet are purple-red, the bill black, the

iris the most beautiful shade of lilac surrounded with pale straw colour. The hen is not nearly so grey as the cock, being a much browner shade; she is a little smaller than he is. The shape of the Picui is very trim and dainty.

WILD LIFE.

Dr. Butler tells of the Picui being usually seen in pairs, though now and then about twelve or more may be seen together. In their wild state these doves breed two or three times in the season; the eggs—two in number—are small and white, and rather short in shape. Hudson says the "coo" is rather loud and somewhat monotonous. The Picui is the smallest dove of the Argentine, where it frequents the neighbourhood of houses.

LIFE IN CAPTIVITY.

I have kept this sweet little dove for many years, and though I have never reared any young ones to maturity yet, I have had them up to three-parts grown, when they were very like the old birds, but not so grey as the cock, being browner, like the hen. I have found the cock Picuis vary very much in colour; one cock I had developed quite a quantity of black feathers; whether it was age, or the food had anything to do with it, I never discovered. Possibly it got more hemp than was good for it, as it lived in a mixed aviary with other birds.

The Picui is not always safe to trust with other doves, even though they may be larger in size. I remember one particularly fierce little specimen I had—I think he of the black feathers—whose method of attack on a large dove was ingenious. Most doves when they fight lift up one wing, and, watching each other most intently, take their opportunity to strike with the uplifted wing; and a blow from a dove of average size is no light matter. If there is no fear of serious injury being done, I like to watch two doves having a sparring match, for they remind me of two fencers; and the one with the quickest eye and readiest wing should win. Often they will stand quite motionless for some time, watching for the first opportunity to strike.

But the Picui, being so small, would have had no chance with a large rival in a combat of this kind, so he adopted the method of getting on to his opponent's back and raining blow after blow on the head of the unfortunate bird, who seemed powerless to shake him off, though very much the larger dove of the two. At present I have only one little cock, but he is a beautiful bird, the softest shade of pearl-grey. He is very good-tempered and spends all his time with the larger doves, seeming to like their companionship. His mate was murdered by a hen Barraband's parrakeet. The late Mr. Cresswell found his Picuis liable to dying suddenly and from no apparent cause, but this has not been my own experience, though I look on the hens as delicate and very liable to egg-binding, even when well supplied with grit and cuttlefish bone.

The Picui dove was first kept at the Zoo in 1883. It has been bred by different aviculturalists in England, and is worth about 15/- a pair, though a few years ago 20/- might have been paid for it. It should be kept in pairs if possible, as it is a dove that is greatly attached to its mate. At one time I had no less than seven specimens of this little dove in my aviaries, besides several others before and since. Sometimes I came across a strong hen who would nest without laying soft-shelled eggs or suffering from egg-binding, but others were just as delicate.

I have spoken of the Picuis' aggressiveness towards other doves, but now and again the right is on the tiny bird's side; and then one cannot but admire his courage. I remember especially one instance: A pair each of Aurita and Picui doves were in one house, and the latter had built and were sitting well on two beautiful eggs. One night when I looked round I found the hen Picui sitting, with the cock Aurita roosting on *the edge of the nest;* the cock Picui was outside in the flight looking miserable. Next day things were worse, for I found the Aurita in full possession of the nest, and the poor little Picui cock standing on his back and in his desperation trying to beat the intruder off with his wings.

It was strange, because the Auritas had one young one of their own in another nest. I took away the Picuis and their eggs and tried to get them to settle in a large cage, but they would not. So I caught the Auritas and caged them, giving the Picuis their liberty again. In an instant they were back on the nest and seemed quite to understand.

One of the most beautiful things about the Picui is the colour of its eye. Next time you have the chance hold one of these little doves in your hand, and examine closely this wonderful violet jewel in the little grey head; you will marvel at its beauty.

The Picui is a tender little bird, as indeed are all tiny doves; they should always be brought in during the winter.

PASSERINE GROUND DOVE.

(*Chamoepelia Passerina*).

Habitat.—South Atlantic and Gulf States, Texas, New Mexico, Arizona and California, south to the West Indies, and through Central America to South America, as far as Peru and Paraguay.

Length.—Rather over 6 inches. Short legged, but well proportioned.

Colouring.—The general colour is pinkish vinous, with the crown and nape bluish grey, the edges of the feathers being dark, as also are those at the sides of the neck. The upper wing coverts are vinous, and the long wing quills cinnamon, the outer edges and tips being dull brown; the wing is blotched with steel-blue shading into violet. The back is olive brown, the feathers of the throat and front of breast are pinkish with dusky centres. The feet pale flesh-colour, the bill yellow (or orange) with a dusky tip, the iris red. This dove, being found in so many countries, varies much; the Jamaican and Socorro Islands seem to possess the brightest coloured specimens.

WILD LIFE.

The Passerine dove is found in great numbers in Jamaica. Mr. Sutcliffe tells us how "when passing along the road one can put them up by scores. They fly very fast and straight, but not to a great distance, and soon alight again, either on a tree or the ground." He also speaks of the great cruelty practised by the blacks when catching birds. "Directly they catch a bird, which they do not kill, they pull out the wing and tail feathers and break their legs to prevent escape (they brought many to me in this state)." He at once stopped them catching on his behalf on learning this. A gentleman I know in Jamaica tells me that the natives catch some of the pigeons in what they call a "caliban," which is a kind of rustic basket made of twigs. It is fixed to drop over the head of a bird which may release it by running across a thread.

Mr. Goodfellow, in his notes on the bird life in Ecquador, tells us that he found the Passerine dove in great numbers in the valley of Chillo. Acacias and aloes grow there, but it is dry and sandy, and many times has been devastated by eruptions from Cotopaxi. The tiny doves may be seen running along the dusty roads and might be snared in great quantities; their nests were built on the branches of the acacia trees, and one nest was also found on the giant flower stalks of an aloe; the sitting bird could be seen from below. The other nests were built of the thin dry seed-pods of the acacia trees, a little dry grass and a few twigs. The Passerine doves found in this district appear to have been a bright coloured variety, for the male is described as delicate fawnish pink, the hen not so bright; when in flight the wings appeared wholly red. Mr. Goodfellow adds he met this dove "in many parts of Columbia, but always in the higher mountains." He gives the bird's length as only 5½ inches.

Gosse noted that when running the Passerine usually erects the tail, and can run very swiftly over the ground. He tells us they eat grass seeds, the seeds of the castor-oil plant, and particularly those of the gamboge thistle. A method of catching them by the natives was by strewing the ground, near the doves' watering-place, with the seeds of the cockspur, which is so adhesive that if one burr touch a feather it cannot be removed except by pulling the feather out. The poor little doves in their struggles only entangled other feathers and were easily caught. Another way was to catch them in springes made of horsehair, though this often ended fatally.

I have kept many specimens of this little dove, though some only for a short time. My first two pairs were bought in 1899, one pair costing me 21/-, and the second, bought from another dealer just afterwards, only 10/6. These four birds were fond of roosting all together, three in a row, the fourth on the backs of the others. Two years after, in 1901, a large importation arrived in England and were sold under a wrong name, some being sent to me as Bronze Spotted doves.

In two or three private importations of doves I have had from Jamaica there have generally been a number of these tiny doves, and very well indeed they have travelled; but to land them uninjured it is necessary to clip their wings first. The late Mr. Cresswell tells us how over and over again cages of them have been shipped to England and none arrived alive, for they would batter themselves to pieces, some even doing so before they could be shipped.

The colouring of the Passerine is the most varied of any dove I know. Some specimens I have had being almost pink with a soft grey bloom on them; one bird was so dark as to be almost black (and a very handsome bird he was); others again were chocolate-brown; but in every variation of shade the feathers are all tipped with dark edges, giving almost a scaled appearance. Every writer seems to agree as to the wildness of this little dove at first (and this has been my own experience), but after a time they settle down, and mine grew quite indifferent even to strangers.

To Mr. Willford belongs the honour of first breeding the Passerine dove in England, though Dr. Russ bred them some years ago in Germany. My own birds nearly bred once in 1902. They made a very pretty nest of hay (rounded and more like a real nest, not like the loose mass of material that generally constitutes a dove's idea of building) on the top of a wooden bracket in a very exposed place in the aviary. One beautiful egg was laid, and the Passerines, filled with importance, began to sit, and sat so well that the egg began soon to

change colour. Then in my ignorance I did a very foolish thing with the best of intentions. The nest was so exposed, and the aviary so full of mixed birds and possible enemies, that I watched my opportunity whilst the hen was off the nest, and fixed up a few Scotch fir branches before the nest, though in no way touching it, as a screen.

But the hen did not like this arrangement, and would not go back till I had taken down the branches again, when she returned at once.

The birds went on sitting, and just a day or so before the egg was due to hatch I found the cock sitting by the side of the hen on the nest. I knew what it meant, and my hopes sank; the cock was trying to persuade the hen to leave the egg and start a fresh nest. Needless to say he succeeded, and in a few hours I had to admit the disappointing fact that the nest was deserted. It was all the more trying as the egg contained a very fine young bird just ready to hatch.

The Passerine is rather a tiresome little dove to other small doves of its size and to its own kind, chasing them continually till they are tired out.

The Zoo possessed a Passerine so far back as 1860. At the present time these charming little doves cost 15/- or less a pair. They should be brought in during the winter, for being such ground-loving birds they would soon get chilled and die if left out in the wet or snowy weather.

THE TALPACOTI (OR CINNAMON) DOVE. (*Chamaepelia Talpacoti*).

Habitat.—Venezuela (Orinoco), Guiana, Brazil, Paraguay, Bolivia, and Peru.

Length.—About 7 inches. Shape, very similar to a Passerine dove.

Colouring.—General colour brown vinous red; paler, almost white, on the breast; upper part of the head and nape grey, lighter on the forehead. The wings and tail are brownish black, and the former has several blotches of a black steel-blue. The iris is dull yellow-red, the feet flesh colour, the bill dark brown. The hen is paler and duller in colouring; a brownish tinge on the mantle; some specimens have hardly a vinous tinge, but are tinged with pale brownish grey, with the middle of the abdomen whitish, and the under tail coverts dull rufous edged with whitish.

WILD LIFE.

Mr. E. W. White, on Birds from the Argentine Republic, writes as follows:—"These pretty chocolate-coloured doves fly in pairs, and at this date (November) were found constructing their nests in the orange groves; they are sometimes seen on the ground busily in quest of seeds, but are very wild and not at all common. I shot specimens at Concepcion, Misiones, in the month of June, but they were rare there."

Another writer, Mr. Hamilton, also notes the shy nature of the Talpacoti. He says: "I only noticed these birds round one or two farms, where they associated in small flocks, feeding on the ground in company with various kinds of small birds, and were remarkably shy; on the approach of anyone they were invariably the first to take alarm and fly away. I saw them occasionally perched upon the roofs of outhouses."

Here we have two records of this dove being shy and timid, but a third writer, Mr. Selby, experienced the reverse. He writes of the Cinnamon dove as follows:—"This diminutive species, which only measures about 6¼ inches in length, is pretty widely distributed throughout Brazil, Paraguay, and other districts of South America. It lives in the open grounds, but generally near the confines of woods, as it roosts and breeds upon the lower bushes or underwood, but never upon the larger trees or far from the ground. It is generally observed in pairs, sometimes in families of four or six, but never associated in large flocks. It appears to be of a tame disposition, as it is seen constantly about the confines of houses or in the farmyards, and readily admits of a near approach."

Wägler observes that in Europe it is easily kept and propagated in the aviary. It is active upon the ground, and feeds upon the smaller cerealia, berries, etc."

LIFE IN CAPTIVITY.

I have only kept one pair of this little dove. This was in 1903, when I bought one pair each of Talpacoti and Scaly doves. The next year I unfortunately lost my hen Cinnamon, I think from cold. It is unwise to leave any small doves in a cold aviary for the winter; they do not seem to have the stamina of the larger kinds.

Mr. Castle-Sloane, in 1904, was very successful in breeding the Talpacoti dove. Probably his birds were from the same importation as mine, for he first had them in the same year. They reared three broods in the season, the eggs of the third nest being laid on July 6th and 7th, and were hatched out on the 22nd. The nest was built of hay in some pine branches nailed close up to the roof of the shelter; so small was the nest that it hardly seemed capable of holding the two eggs. The young were like the hen in colour. (Another writer tells us they have no black blotches on the wings, and the tail feathers are edged with reddish). Later a fourth brood were hatched out, but I do not know if they were reared.

So eager were these Talpacotis to nest that later on, I think in 1906, they began sitting on two nests at once. The hen first built in some bushes near the aviary door, where she was often disturbed, for every time some one went in to feed the birds she would fly up and leave the nest. She then laid two eggs in an old nest close by; these the cock sat on, whilst the hen continued to sit on her first clutch. In the case of the cock the eggs came to nothing. It is the rule with doves that the cock sits by day and the hen by night, but I have known of at least one case where the hen appeared to do most of the work. The Talpacoti dove has been known to turn wholly or partially black in plumage where odd specimens were kept.

It was first kept at the Zoo in May, 1868, and bred there in August of the same year, and also several times in later years.

CHAPTER VII.

BRONZE-WING DOVES AND PIGEONS.

The Cape (or Harlequin) Dove.
,, Tambourine Dove.
,, Indian Green-winged Dove.
,, Bronze-wing Pigeon.
,, Brush Bronze-wing Pigeon.
,, Partridge Bronze-wing.

THE CAPE (OR HARLEQUIN) DOVE.

(*Ena capensis*).

Habitat.—Common in Tropical and Southern Africa, and also Madagascar and Arabia, where it is found near Jeddah and Aden.

Length.—About 9 inches. Shape, graceful and slender, with very long tail.

Colouring.—General colour a brownish grey with (in the cock) a black mark over the face and throat. Two black bands cross the rump, and between them a belt of pale buffish brown. The breast and abdomen are white, the tail, which is very long, black and white. On the wings are large steel-blue patches of metallic feathers. The basal half of the bill is lake red, the remaining half orange. The iris is brown, the feet and legs dark rose-red. The hen differs chiefly from the cock in having no black mark, and is much browner in colour; but I have found individual birds vary very much. The young birds resemble the hen, but have blackish bands on the head and neck. Their feet are dark purple, and beak black.

WILD LIFE.

The Cape Dove is also known by the three other names of the Harlequin, Masked and Naquama Dove. It is found on wooded steppes, in hedges and gardens, round the farms, and in the cattle kraals. It builds its nest of a few dry twigs, generally in palms and acacias, from June to September. It would seem as if the nest were sometimes also built on the ground, for Captain Horsburgh, speaking of this dove, says: "I found the nests of this latter species last June, which is nearly the middle of winter here; one of the nests was on the top of a furrow in a ploughed field and not a bush near it. I presume the eggs must have been near hatching time, as the little hen would only go a few feet away from the treasures, and as soon as I moved away she flew to them at once and settled herself down in a most confidential manner."

This was at Bloemfontein, and the same writer also tells us he has seen dozens of this little dove in Cape Colony. In one place he bought four specimens from a boy at a farm for 6d. each.

In its wild state the Cape dove frequents the ground much more than when it is in captivity. The coo is a sound of Hoo-roo-roo, and as the bird makes it he spreads his long tail and jerks it upwards. The hens are imported much less frequently than the cocks.

LIFE IN CAPTIVITY.

This little dove is one of the most graceful of its kind. It has a very long slender tail, and when in flight with outstretched wings it hovers like some beautiful foreign butterfly, for its wing motion is rather slow and hesitating. It is a quiet lazy little bird in captivity, and spending most of the day sitting quietly on a branch, seemingly indifferent to its surroundings.

I have kept several specimens of this dove, and though my hens have laid eggs, I have never been successful in breeding any young ones. It has been bred in Germany and by two aviculturalists at least in England. The earliest of these records was in the aviary of a friend of mine, a lady in the South of England. She did not for long rear the young ones, for if the weather turned cold when they were in the nest, and the old birds failed to brood them, the young birds always died; at last, however, she succeeded in rearing a pair to maturity.

In the second instance the gentleman in whose aviary the Cape doves bred, writes to me as follows:—"I had several young hatched, but found that they *would* jump out of the nest at an early age and that the adults would not feed them on the ground. However, I devised a method of keeping them in the nest as long as I wished, and I then had no further trouble. I dare say you have noticed that the eggs are not white, but a deep warm buff; one clutch was almost saffron colour."

One of my own hens came to a sad end. She

had a way of getting over on her back and not being able to right herself again, but would lay quite helpless. Many a time she was rescued, but early one morning she was found dead, having got over on her back, and no one being by to save her. Dr. Butler mentions that one of his cocks, when weak and ill, also rolled over on its back, and perhaps it is an accident peculiar to this dove, for I cannot recall any other kind that does the same.

The Cape dove is only imported now and then, and on the whole the price has risen. About eight years ago these birds were 13/6 the pair; now a good healthy pair will often fetch 20/-. This dove, like most of the smaller varieties, cannot stand our English winter without heat, and must be brought indoors in good time.

THE TAMBOURINE DOVE.

(*Tympanistria bicolor*).

Habitat.—The whole of South and South-West Africa, on the West Coast as far as Casamance, and on the East Coast as far as Mombas. It is found in Caffraria, also in Madagascar, the Comero Islands, and Fernando Po.

Length.—About 8 inches. Shape, very rounded, and sturdy.

Colouring.—The cock is dark chocolate-brown, but the forehead, face, breast, and underparts are snowy white, the light and dark plumage being clearly defined and making a very beautiful contrast. On the wings are a few metallic spots of dark green or purple. Under the wings the feathers are a warm cinnamon colour, but it is only noticeable when the wing is raised. This feature is very common in many other doves besides the Tambourine. The feet are crimson, the eyes hazel. In shape this dove is sturdy and compact. The hen is a decidedly lighter brown than the cock, and her white parts are much greyer, while the wing spots are not metallic.

WILD LIFE.

The Tambourine was so named by Levaillant because he thought its cooing resembled the sound of a tambourine at a distance. He evidently considered it a rare dove, as he informed M. Temminck that for 200 specimens of another species he could only obtain 27 of this. Levaillant records it as arboreal in its habits, and it is said to build in the great African woods on the summit of trees.

Dr. Butler tells us that the Tambourine feeds largely on the dropped seeds of the castor-oil plant and other plants, and that it descends to the ground to feed. The flight in its wild state is exceedingly swift. The coo, beginning slowly, grows faster and faster, till it ends in a vibration.

The friend who sent over my three birds (two cocks and a hen) told me how very wild he found these doves when first caught, and that unless their wings were clipped they would dash upwards and either stun or kill themselves against the cage top. One cock struck his head with such force that they believed him dead, but after a time he recovered, though a second one died. An interesting account is given by Mr. Robin Kemp of the Tambourine dove from his personal experience of it in Africa.

A native brought him six or seven of these doves which he had trapped in a rice field. All their flight feathers, and in most cases their tail feathers, had been ruthlessly plucked out. This possibly was done to prevent the birds escaping, but on the other hand the natives seem to have no regard for the sufferings of animal and bird life. I have heard of them selecting the bluntest knife they could find and sawing it across the neck of a chicken to prolong the poor thing's agony when being killed.

Mr. Kemp's birds seem to have been of both sexes, for some had white and others greyish breasts. He fed them on rice, with which diet they seemed quite contented, but he never succeeded in getting them to live in captivity for more than a few months. They were very plentiful (in South-East Sierra Leone) and resident throughout the year.

LIFE IN CAPTIVITY.

The Zoological Gardens in Regent's Park possessed three cocks and one hen Tambourine dove as far back as 1871. After 1883 it was imported freely, and then again it ceased.

At the present time this dove seems hardly obtainable. A year or two ago a dealer told me he had sold some for about 10/- a pair, but he did it not knowing what the birds were, nor their worth, as this sum is not a tithe of their real value. The three birds I had were very quiet—they seldom moved about the aviary, and did not interfere with my other birds. I kept them in an aviary that can be heated in winter, for this little dove is only half hardy. Dr. Greene, who kept a pair of these birds, considered them charming; he likened the coo to the sound of water being poured from a bottle, the cock bowing and spreading his tail at the same time, when making love to the hen; she, however, was very quiet, and the only sound she ever made was a little "huh."

This pair of birds, in addition to their seed diet, were very fond of insects—flies, beetles, and ants, also mollusca, whether small snails or slugs; they

1, 2.—Hen Bronze-wing Pigeon. 3.—Cock Bronze-wing Pigeon.
*4, 5, 6.—Partridge Bronze-wings. 7.—Cock Brush Bronze-wing.
8.—Cock Brush Bronze-wing and Bleeding Heart Pigeon.
9.—Cock Brush Bronze-wing and Ruddy (or Dwarf) Turtle Dove.
10.—Cock Solitary Ground Dove.
11.—Cock Solitary Ground Dove and Ruddy Turtle Doves.
12.—Hen Indian Green-winged Dove.
13.—Cock Indian Green-winged Dove and Barbary Dove.

Photographs by Mr. D. Seth-Smith, F.Z.S., M.B.O.U.

also ate earwigs and spiders. Dr. Greene discovered this accidentally when he one day saw his doves disputing with his Pekin Robins over some insects (provided for the latter birds) and gobbling down the dainties as fast as they could. Though the Tambourines were very wild when first they came, they soon settled down, and would take mealworms and insects from the hand. Dr. Greene considers this insect food, combined with the seed diet, as most essential to the health of these doves, and he also advises a constant supply of cuttlefish bone should be given. I believe, from my own experience, that doves thrive better and keep in finer plumage if a little soft food (that is, insectivorous food moistened and mixed with half biscuit, crushed) is given in addition to the seed. Dr. Greene's birds made a nest of sticks on the top of a Hartz canary cage, but unfortunately he did not realise that the doves needed heat in winter, and both the birds died when the cold weather set in—first the hen, and a little later the cock.

To Dr. Butler belongs the honour of having been the first to breed the Tambourine in this country, but not till he had suffered many disappointments and expectations that only ended in nothing.

Many people think it is very easy to breed doves. I grant they will easily make nests and lay eggs, but to rear young birds to maturity is a very different matter—one has to be prepared, like King Bruce's spider, to "try, try again."

Those aviculturalists who have at last succeeded in breeding a rare bird for the first time, after *many* failures, can understand the joy of final success. Dr. Butler's birds made nests, laid eggs, hatched them or not, let the young birds die, and this not once or twice, before any young were really reared. He tells us how the young birds were 12 or 13 days old when he first dared to look at them. They were then about the size of a sparrow, and of most singular appearance. Most young doves have at first long downy-like hairs intermixed with the feathers, and in the young Tambourines these hairs were very marked. Compared with the parents, they were very tawny, and of course the white parts were not visible. It is curious that the white breasts of any adult doves are seldom if ever seen in the young birds; what will be white later is generally buffish or grey colour.

One of Dr. Butler's little Tambourines met with a sad accident which ended in its death. Both young ones jumped out of the nest, being suddenly startled by the cock bird, and fell on to the hard cement floor; one escaped injury, but the other died three days later, though apparently unhurt at the time. The uninjured bird was successfully reared, though it was slow in being able to fly or do for itself.

Though the Tambourine dove is very lovely, I cannot say I found my own three birds very interesting. They spent nearly all their time in the shelter, and only came out some times into the flight, generally towards evening; they greatly enjoyed sitting out in a heavy shower of rain, standing like a statue with the head thrown back; but these little doves seem too lazy to care to move about much, and the alertness of most of the smaller doves seems to be lacking in them—they just sit still for you to admire them, and that one can do very honestly.

I used to hear my cocks cooing, and once I saw one carrying a twig about; but they made no further effort towards nesting. Once when I had to catch one it cried and moaned like a child with fright, in much the same way that an Aurita dove does.

INDIAN GREEN-WINGED DOVE.
(*Chalcophaps Indica*).

Habitat.—From India, Ceylon, Burmah and South China, through the Malay Peninsula and the Malay Archipelago to West New Guinea and the Islands in Geelvink Bay.

Length.—About 10 inches. Shape, rather short and thick set.

Colouring.—Adult male—Forehead and streak above eye white, crown and back of head leaden grey; back of neck, throat and breast rich maroon (rather lighter on under parts); shoulder butts whitish grey, wings and upper back bright "bottle" green, the lower back blackish barred across with grey; long quill wing feathers blackish, bill bright sealing-wax red, with dusky cere; iris dark brown, feet crimson. The hen is chestnut brown where the cock is maroon; she is rather a darker shade on the back of the neck, her shoulder butts are chestnut, and the white on her forehead smaller and not so pure; lower back chestnut, wings bright green with blackish quills, feet crimson, bill bright red.

WILD LIFE.

This beautiful little dove is common in India, and is often sold in the Calcutta market, or imported for sale to England. Dr. Butler tells us that "the Malays are said to give the name of 'Fool Pigeon' to this bird on account of the ease with which they capture it. Concealing themselves behind an arbour of branches in a clearing, they scatter rice around, and the birds crowd round in such numbers and with so little suspicion that they are seized one after the other by the hand

and drawn into the arbour, the remaining doves being too absorbed to notice the disappearance of their comrades." On the other hand, in Upper Assam this bird is described as being shy.

LIFE IN CAPTIVITY.

I have never bred this beautiful dove myself, though I have kept numerous specimens since 1898. One of these earlier birds escaped, but not being able to fly well he was soon recovered. The hen tormented and chased the cock; she was not a good feathered specimen, and always looked hump-backed. I kept the doves in the heated aviary that winter, and turned them out in April of the next year. I did not find them very interesting; they kept much in the shelter, and in the summer came out to roost at night.

In January, 1901, one of my birds nearly died of cold. I found it in a state of collapse, trembling and the feet clenched. I brought to the heated aviary and placed it on the hot pipes, and gave it a little brandy and water. The moans of the poor bird were pitiful to hear, but after a time it came round, and though it ate nothing all day, by the next morning it seemed all right. I still have one of my original birds; he must be by now at least ten years old, and is still in perfect plumage and as young looking as ever. Last year I got a good breeding bird as a mate for him, but she has not found much favour with my old cock; he seems only interested in himself, and they have made no attempt to nest.

The Indian Greenwing has been bred several times in private aviaries. Dr. Russ bred it freely, the nest being formed in a wire cage hanging high up. Mr. Seth-Smith bred this dove in 1904. The hen was a very old bird that had nested and laid eggs whilst in her former owner's possession. A new mate being obtained for her, they started nesting, though not till the spring after the cock's arrival. Several young birds were reared. The young were very small on leaving the nest; their heads were almost bare, but the wings were fully feathered and they could fly well. In colour the young birds were a "very dark brown, almost black, broadly tipped with reddish brown"; even then a few green feathers were visible on the back and wings. The change in the plumage was gradual, and in the first adult feathering the colour was not so bright as in the old birds. The two eggs were cream colour, not white.

Mr. Thomasset tells us how his cock (the original mate of the bird referred to above) would coo and caress the hen. He would depress the head and breast, and arching his wings above his back, show off all his beautiful green plumage while displaying to her.

Dr. Greene gives a long account both of his own Greenwings and also the nesting of a pair in Wales. These latter birds stood the severe winter of 1881 out of doors, when the thermometer went down to 3 degrees below zero. The nest was built in the shelter (in a small dead spruce), and was composed of twigs, and the young birds were hatched out three times during the season. Owing to numerous accidents, however, they were not all reared. In this aviary was a very mixed collection of birds, from Crested doves and parrakeets down to Zebra finches; the aviary was only 24 feet long by 14 feet wide, with a sleeping-house 12 feet by 6 feet, and this is not a large space for so many birds of different kinds, to have any hope of successful nesting.

Dr. Greene tells us that the young Greenwings resemble the hen until after the first moult, but are wanting the bronze reflections of the adult bird. The young were hatched in about 17 days, and in about three weeks left the nest, but were fed by the parents for some time longer. There were two broods during the season, but so many as four have been known. Both Dr. Greene and another writer give the Greenwing a character for bad temper. In the one case the hen drew blood from the male with her bill, plucking out many feathers every time he tried to caress her; in the other instance a pair had lived together for years and reared numerous young ones, when suddenly the cock turned upon the hen and ended in murdering her.

I cannot say I have found my own birds fierce either with each other or with other doves, my first hen being the exception, but she did nothing serious. At the time Dr. Greene wrote Indian Greenwings were 30- to 40/- a pair. I paid 18/6 for my four birds in 1900; the average price now is about 12/6 a pair. These doves were kept at the Zoo in 1856, and many times since.

THE BRONZE-WING PIGEON.
(*Phaps chalcoptera*).

Habitat.—Australia and Tasmania.

Length.—Over 15 inches. Shape, long and heavy, with short thick legs.

Colouring.—Adult male—The forehead rich buff, a white line runs across each side of the face under the eye, the breast is a lovely shade of soft purple shading into grey on the abdomen, the sides of the neck (merging into the breast) deep slate grey. The wings are very beautiful, being adorned with four rows of gorgeous metallic feathers, the first

three green, changing to rich fiery copper, the last row large patches of violet, changing into Prussian blue. The rest of the body is very like the plumage of a pheasant, being brownish mottled feathers, the crown of the head olive brown, with a dull purplish band over the eye. The hen has a whitish forehead, her breast is paler, not so rich a shade of purple. The bronze in the wings is more greenish gold in the first three rows and purple in the hind row (lacking the red copper and blue in the cock); her shape and mottling is very pheasant-like. The eyes are full and dark, the feet salmon red, the beak slaty black. In shape the Bronze-wing is rather long than rounded; it is a heavily-built bird, and the legs look rather short in proportion to the body.

WILD LIFE.

Perhaps there is no foreign pigeon that has been written about in its wild state so much as the Bronze-wing. Gould says of them: "They love to dwell on the most sterile plains, where they feed almost exclusively on grass-seeds, and whence, on the approach of evening, they wing their way, with arrow-like swiftness, to the water-holes many miles distant."

"In the maps the name of 'Pigeon Ponds,' given to welcome pools of water, still marks the mode of their first discovery," so says Dixon in his account of the Bronze-wing. He also gives us some of the experiences of Captain Sturt, whose vivid pen-pictures make us realise how valuable is this trait of the Australian pigeons in unconsciously guiding those travellers in need of water.

To understand how great that need is, let us hear first what Captain Sturt says about his personal experience of the heat of Australia during his all but successful effort to reach the centre of the continent.

He says: "Stones that had lain in the sun were with difficulty held in the hand; the men could not always keep their feet within the glowing stirrups; if a match fell to the ground it ignited, and the earth was thoroughly heated to the depth of three or four feet; their hair ceased to grow, and their nails were as brittle as glass; the atmosphere on some occasions was so rarified that they felt a difficulty in breathing, and a burning sensation on the crown of the head as if an hot iron had been there; they were obliged to bury their wax candles to keep them from melting away; they planted seeds in the bed of the creek, but the sun burnt them to cinders the moment they appeared above the ground." At three o'clock in the afternoon the thermometer in the sun was 157 degrees.

I should like to give you Captain Sturt's account in his own words how he was greatly in need of water and how he was guided to it by a pigeon, but I have not, unfortunately, space to give it in detail. It is very pathetic. He tells us how, when they were badly in need of water, none of the horses would eat, save one called "Traveller." They all collected round him as he sat under a tree, and his own horse pulled his hat off his head to call his attention to their thirst, but no water was to be had; so the men saddled again and they proceeded onwards. At the head of the valley poor "Traveller" dropped down dead, and when they finally came to the place where they fully expected to find water it was gone. Captain Sturt poked his finger in the mud, and moistened his lips with a little water that oozed into the holes. "Suddenly a pigeon topped the sand-hill—it being the first bird we had seen—a solitary bird; passed us like lightning, it pitched for a moment, and a moment only, on the plain, about a quarter of a mile from us, and then flew away." Mr. Sturt marked the spot, and there was water—water that in their most desperate condition meant life.

THE BRONZE-WINGED PIGEON.

Photo by Mr. D. Seth-Smith.
From The Avicultural Magazine.

Temminck tells us that the Bronze-wing makes its nest "in the holes of trees at a slight distance from the ground, often on the ground itself, and lays two white eggs; their principal food is a small

fruit resembling a cherry; the kernels of this fruit are always found in their gizzard." After the breeding season the Bronze-wings gather in flocks in the stubble-fields, where Gould says 30 or 40 brace may be killed in one day. This pigeon is considered very good to eat, and is often shot as in England we should shoot gamebirds. The breeding season in Australia is from August to December.

Dr. Butler tells us that the nests are often built in the horizontal branch of an apple or gum tree, and that the Bronze-wing loves to live in the districts where the acacias trees are found (on the edge of the sandy flats), as it lives largely on their seeds; it often rears two or more broods in a season.

Mr. Campbell notes that the Bronze-wing was first so called as far back as 1789; he mentions that this pigeon will fly within 50 yards of water, and always walks into it, mostly in the evening, but a few birds come in the morning. Having quenched its thirst, it will walk a few yards out of the water and then fly away. The Bronze-wing will feign a broken limb to lure you away from the young birds. The nestlings, we are told, suffer much from the crows, who are known to kill and eat them.

Dr. Leichard gives the red fruit of Rhagodia and the blackberries of a species of Jasmine as the chief food of the Bronze-wing.

LIFE IN CAPTIVITY.

This lovely pigeon is deservedly a great favourite, for it is tame, hardy, and easy to keep, apart from its great beauty. It was bred at the Zoo so far back as 1868, and has been bred both there and in private aviaries many times since; indeed, it is almost the easiest to breed of all foreign pigeons in captivity.

As a proof of their kindly nature, we are told of a tiny Passerine dove that formed a devoted friendship with a hen Bronze-wing. So hardy are these pigeons that they have been known to bathe when ice has been in the bath.

My own pair of Bronze-wings I have had for years. I had at first two cocks and one hen, and gave the lady her choice of the two. She was not long in making up her mind, and seems never to have repented it, for they are a most devoted couple; but the strange part is that while the discarded bird was a magnificent cock, perfect in every way, the favoured one was blind on one side, the eye being completely gone. Perhaps it was a case of "pity being akin to love," but certain it is the hen never wavered, and it used to be most amusing to watch these two birds perched facing each other, gazing into each other's eyes as if they were entranced.

Every year I have reared several young birds, but nearly all are cocks; it is very seldom I have any hens.

I find my Bronze-wings, but especially the hen, very fond of wineberries, not quite ripe; the fruit is like a very small raspberry, but bright orange-red in colour, and the birds like them best before they get soft. Apart from its use as an article of food for my doves—other kinds liking the berries besides the Bronze-wings—the wineberry is a very pretty shrub and would make a splendid hedge.

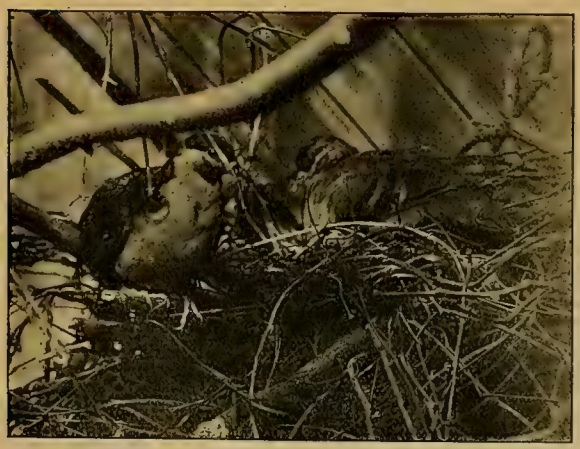
The young Bronze-wings are very pretty, being brownish with the feathers edged with a lighter shade; the white marks above and below the eyes are very distinct, and the little cock shows his buff forehead whilst still in the nest; the "bronze" does not appear till later.

Mr. Seth-Smith tells us his young ones left the nest at two weeks old, and were fed till six weeks old or more by the parent birds. The eggs are large and white, and incubation lasts 17 to 19 days, the cock sitting during the day, the hen at night. The Bronze-wing is one of the kindest and most good-tempered of doves towards its own tribe. I have known my old hen not only brood her own young one, but also a little Solitary ground dove that was about the same age. The Bronze-wing's coo has been likened by one writer to the lowing of cows in the distance, and by another to the groan of a wounded horse. It is a deep note and rather solemn.

A short time ago I was much interested in watching my birds making love to each other; the cock drew himself up, swept his tail in a fan, and burying his beak in his breast, struck an attitude; then, still in the same position, walked partly round the hen. *She* dabbed her beak several times on the shelf (both birds were standing on a broad wooden shelf that runs along the aviary front), and then came up to the cock and kissed him again and again on the neck and face; she then went a little way from him and spread out her nearest wing fanwise to him, showing all the metallic feathers. The affection of this pair of birds for each other is very great. I have had them now nearly seven years.

The Bronze-wing has been known to eat earthworms besides its seed diet; probably it would eat mealworms too.

A flock of these pigeons are wild at Woburn Abbey; and ten were turned out at the Zoo as an experiment. The Tasmanian birds are said to be more brilliant than the Australian ones. The value of the Bronze-wing varies very much. I paid 48/- for my three birds. I have seen them offered for



1.

2.

3.

BRUSH BRONZE-WING PIGEON AND NEST.

1.—FEMALE ON NEST, MALE PERCHED NEAR.
2.—NESTLING, 16 DAYS OLD.
3.—MALE COVERING NESTLINGS.

Photo by Mr. D. Seth-Smith.
From The Avicultural Magazine.

as much as 50/- a pair, or odd ones for as little as 7/6 or less. The French call this pigeon Lumachelle. It is a very hardy bird, and can stand the winter out of doors.

BRUSH BRONZE-WING PIGEON.
(*Phaps elegans*).

Habitat.—Southern Australia, from Swan River on the west to Moreton Bay on the east, Tasmania, and Islands in Bass's Straits.

Length.—About 13 inches. Shape, rounded, and well proportioned.

Colouring.—Adult male—Crown of head grey, forehead bright sable red. A white line runs behind the eye; the breast and neck slate grey, a triangular patch of dark chestnut on the throat. Back of neck and mantle reddish chocolate; back and wings warm chestnut. The bands of metallic feathers very vivid across the wings. The first band shows green and orange-red reflections, the second band blue and green.

The adult female has breast and neck dun-grey. Back, wings and tail olive-brown; the forehead and top of head dun-grey, sometimes slightly chestnut; the sides of head and over eye rich chestnut, coming down over the back of the neck, and outlining the sides of the throat. There is a creamy white patch behind the eye. The metallic colours are on the wings, but not so large nor rich in colour as the cock. The eyes of both birds are round and dark, the feet and legs in both sexes bright pink-red. The young birds are brownish with the edges of the feathers rufous brown. At 26 days old a rich chestnut tinge has appeared on the neck. The sexes can then be distinguished, the male showing more white on the cheeks and chestnut on the nape and forehead. At the age of nine or ten weeks the young bird has changed into the adult plumage.

WILD LIFE.

This pigeon prefers the more scrubby localities, especially those that are low and swampy. Gould writes: "I have never seen it perch on the branches of trees. When flushed it rises with a loud burring noise similar to that made by the rising of a partridge." "It is a very difficult bird to shoot, from it inhabiting the denser part of the scrub, from which it is not easily driven. It flies but little, rarely for a greater distance than to cross a gully or top a ridge before it again abruptly descends into the scrub. Its food consists of seeds and berries of various kinds, particularly in Tasmania of a plant called Boobyaller." Its note is low and mournful, and is given at evening more than any other time.

Mr. Campbell tells us that in Western Australia this pigeon is fond of placing its nest in the fork of a grass tree. Mr. Brent noticed that the Brush Bronze-wing usually chooses the shady sides of deep gullies for nesting places. The bird "breeds almost any time of the season, but usually during the months from October to January."

LIFE IN CAPTIVITY.

To Mr. D. Seth-Smith belongs the honour of first breeding this most beautiful pigeon in this country, in 1904. Up to this time the Brush Bronze-wing was almost unknown in English aviaries, though one was purchased for the Zoological Gardens in 1881. Mr. Seth-Smith has given us some very interesting notes on this bird. He tells us how he purchased three birds, two cocks and a hen, and how from the very first these birds were tame, and directly they were turned out into his aviary the cocks began to pick up sticks to build a nest with, and bow and coo to the hen.

They started nesting within two or three days of their arrival, when one cock was removed away and the pair left together. My own Brush Bronze-wings when nesting have been very particular as to carrying *plenty* of material up for their nest; indeed, this has proved before now an unfortunate trait. I tie up nesting tins for my doves, with just a small quantity of dead heather in to start them; and heather is also thrown on the floor for the birds to pick up and arrange in the nest themselves. My Brush Bronze-wings had built their nest and seemed sitting well, one or two eggs having been laid, when I had to put down more heather for the benefit of some other nesting doves in the same aviary. The sight of it was evidently too much for the Bronze-wings, for they persisted in adding more material to the finished nest, a proceeding in no way good for the eggs underneath.

Mr. Seth-Smith noticed with his birds a very interesting fact whilst they were building. The hen sat on the nest, the cock fetching all the material, which she arranged, and often he would settle on her back and, bending over her, pass her the twig over the head, which she would take away from him and tuck in its place, whilst he would descend for more; the idea evidently being that in this way the nest was undisturbed.

Just ten days after Mr. Seth-Smith's birds arrived the first egg was laid, and the next day the second followed. Like all other of the dove tribe, the cock sat during the day, the hen taking his place on the nest at night. One egg was fertile and hatched, and at first the young one received most devoted attention from its parents, then came that disappointing experience which is the common lot of those who keep doves; the parents began to want to nest again before the first young one could do for itself, with the result that it eventually drooped and died. This is about the worst trouble one has to contend with in breeding doves; the building, laying eggs, and hatching are easy enough, but *rearing* the young birds—that is quite a different matter.

A second time the birds nested, and again the same danger threatened, then as the hen seemed the worst parent, she was removed from the aviary, and the cockbird, having nothing now to distract his attention, began again to feed the young ones well. One of the poor little things, however, died; the other pulled through, and changed into adult male plumage when about ten weeks old. Even when in the nest the sex of the two young ones could easily be seen, the young cock showing much more buff on the forehead than his little sister.

Later on in the year, when the weather began to be warmer, the Bronze-wings nested without any trouble (the hen having been given the second cock for a mate), and the young birds hatched were able to fly as strongly at three weeks old as the first young bird could at six; further, a week later, when a month old, these two young doves could feed themselves. The old birds, at the time Mr. Seth-Smith wrote, were sitting again.

The Brush Bronze-wing is one of the prettiest of all the dove tribe usually seen in aviaries. It is so plump and compact in shape, and the colouring is most harmonious and beautiful. They do not seem to ever get very low in price, and a pair of good birds would fetch 25/- to 30/-, though odd specimens would not cost nearly so much. The cock when cooing to the hen spreads his tail and beautiful metallic wings, and bobs up and down like the Crested pigeon.

I have found the Brush Bronze-wings very devoted to each other, and to their eggs and young. My present pair are a model couple. While one bird is sitting its mate will frequently sit close by the nest, and I remember once when one of the young ones fell out (when only a few days old) finding the hen sitting brooding it on the floor as it lay dying, for it was injured badly. The poor little mother's heart must have been sadly divided, for the remaining young one was still up above and too young to be left alone. The young birds when they leave the nest are still covered with long down-like hairs as well as feathers, the latter being mostly dark brown edged with a lighter shade, while the down is buff colour and stands up amongst the feathers. The eyes are very round and bright, and have the innocent wondering look that all young doves have—as if

the world were something very new and strange, as indeed it must first seem to them when they leave the nest and come amongst other birds. I should consider the Brush Bronze-wing quite a hardy dove.

PARTRIDGE BRONZE-WING PIGEON.

(Geophaps scripta).

Habitat.—North-Western and Eastern Australia, from Rockingham Bay through the interior to Victoria.

Length.—About 12 inches. Shape, rounded, but rather long in body.

Colouring.—Adult male—pale brown above the upper part of the wings with paler tips to the feathers; on the lower half of the wings rich purplish-green metallic patches. The forehead is ashy, the face marked with black and white stripes, one stripe going beneath the eye, another behind it. The eye is black, surrounded with naked blue skin, and the corner of the eye reddish. The black on the face forms a crescent across the lower part of the throat, the flanks are white, the abdomen grey, the feet purplish crimson, The hen is like the cock, but slighter and rather smaller. The legs of this dove seem rather short in proportion to its size, but more fitted to a bird that keeps so much on the ground.

WILD LIFE.

The flesh of the Partridge Bronze-wing, or as it is called in Australia, the Squatter pigeon, is considered delicious eating and equal in flavour to the Wonga-Wonga. Campbell speaks of this Bronze-wing going about in little flocks of five or six birds, and that it will run and squat down to hide itself when it suspects danger. Its nest, contrary to others of the pigeon tribe, is made in a hollow in the ground and lined with soft dead grass; the eggs are white and two in number.

The Partridge pigeon breeds at almost any time of the year, but usually from September or October onwards. The food consists of grass and seeds, and at certain seasons berries and insects. This bird can run with great speed, and when it "squats" will almost allow itself to be trodden on. If obliged to rise it flies off with a great noise and settles again, either on the plain or the outstretched branch of a tree, along which it squats like a night jar, in the same line as the limb.

LIFE IN CAPTIVITY.

This gentle little pigeon has not long been well known to English aviculturalists. One bird was presented to the Zoo in 1883, and in 1891 some eggs were laid (several other birds having been acquired since the original one) and hatched by a Barbary Turtle-dove; the young birds, however, only lived 14 days.

To Mr. T. H. Newman, our greatest living authority on doves and pigeons, belongs the honour of raising the Partridge Bronze-wing to maturity (for the first time in England) in his own aviaries. Mr. Newman gives us a most full and interesting account of the nesting, from which I have only space to recount a few facts.

PARTRIDGE BRONZE-WING PIGEON.

Photo by Mr. D. Seth-Smith.
From The Avicultural Magazine.

His birds spent nearly all their time on the ground, and would roost in a little group, their heads pointing in different directions, their tails coming close together in the centre. The old birds were greatly attached to each other, were seldom far apart, and kept up a running conversation in a low "crooning" tone.

These pigeons have a way of rising on tip-toe and giving their wings a vigorous flap. The cock used to go through some most amusing little ways when he met the hen: he would raise his head and back feathers, elevate his tail and wings, and thrice repeat a hurried coo.

I had a pair of these Bronze-wings myself, and loved to watch the cock going through his

postures; he did them with much solemnity, as if it were the most important thing in the world; but the hen, I suppose, was used to it, and took it all very quietly. I never reared any young ones, though my hen laid several eggs. I found them very gentle little birds, and very attractive additions to my collection of doves and pigeons; everyone who saw them admired them.

But to return to Mr. Newman's birds. His old pair were very tame, but the young ones were much wilder. I have often found this the case with doves, and one nervous young one will put an whole aviary in a flutter; so it is wise to remove the young from nesting birds as soon as they are well grown and there is no doubt about their being able to do for themselves. In April Mr. Newman's birds started nesting, but this first attempt was a failure; in May, however, the birds tried again, and one young one was reared. This bird would sit by the old bird beside the nest whilst a third pair of eggs were being hatched, and, unlike most doves, the affection of the parents did not cease as the first young bird grew older, for it was fed (with the younger bird) by them until it was between nine and ten weeks old and almost their own size.

A curious fact about the young birds is that they begin to moult before the first plumage is complete, so that by the time the young one is full grown it is in adult feather. The young birds, when first they leave the nest, run about very actively; they utter a sort of chirping whistle and nestle under the parent birds. When about 13 days old the white face markings begin to appear. The incubation of the eggs lasts 17 days, and the young bird first leaves the nest at about nine days old. The Partridge Bronze-wing is the most amiable of pigeons, and Mr. Newman's six birds used all to roost together in a group.

When one considers how this sweet little pigeon is prized in our English aviaries, it is sad to think of the little value put upon it in its own land. We are told how in quite recent years 400 of these ground doves were caught and offered to the Sydney dealers, who declined them; but finally a party of pigeon shooters bought the lot, and they were all used in shooting matches.

Poor little birds! They were said to be "very numerous" in the neighbourhood then, three years ago; we wonder if they are so *now!*

The Partridge Bronze-wing was bred in the Melbourne Zoo in 1894.

I do not know the value of these doves a pair, for my own birds were given to me; but they are rarer than the ordinary Bronze-wing. My birds laid several lots of eggs in a large box lined with earth and sods that I placed for them in the aviary. They sat very well, and one could not help noting how like the sitting bird was to the colour of the earth, and how in their wild state it must be very difficult to discover their nests. A hen Red Mountain dove who had taken a fancy to the Partridge doves used to sit in the box with them, though not, of course, on the eggs. I never had any young birds, perhaps because my little hen was delicate; and eventually I lost both her and the cock. In some way the hen had unfortunately sprained her leg, and though she was able to get about, I do not think she ever quite recovered.

The cock bird had two different kinds of coos, but with one he made no display. I never exposed my birds to much cold, so do not feel sure if it would try them or not, but they look much more fragile than the other Bronze-wings, and it seems dangerous to expose partly ground birds to our cold and wet winters.

CHAPTER VIII.

CRESTED DOVE AND PIGEON.

The Plumed Ground Dove.
,, Australian Crested Pigeon.

THE PLUMED GROUND DOVE.
(*Lophophaps leucogaster*).

Habitat.—Southern Australia and North-West Australia; but according to Gould, "the whole of Central Australia, the Gulf District, and the interior of Northern and North-Western Australia."

Length.—About 8 inches.

Colouring.—General colour rich cinnamon fawn. A long upright crest (like that of the Crested Dove) on the head, of fawn and grey. The top of the head and a patch behind and below the bare skin round the eye, blue-grey. Above this face patch and also in front of it are two patches of white, that in front going under the chin; the upper throat below this is blackish. The lower throat and wings cinnamon fawn, the wings having black and grey irregular marks across them, giving the bird an almost barred appearance. On the lower part of each wing a large purplish metallic spot. The back is brownish fawn, the feathers still edged, but not nearly so distinctly as in the wings; the tail is the same colour, but with a blackish tip to it. Below the cinnamon on the lower throat is a white line right across the breast and extending almost behind the shoulders. This is bordered again by a black and greyish band, the breast below is whitish, the feet red, and the bill slate; the iris is orange, surrounded by a

patch of bare red skin, pointed in shape at each end. On the upper edge (dividing it from the grey crown) is a narrow blackish line. The sexes are alike, but the cock is a trifle larger than the hen.

WILD LIFE.

The little plumed Ground Dove loves the rocky country, and so is sometimes called in its own land the Rock Pigeon. They are strictly ground birds, and never perch in trees, but love to bask in the hot sun on the rocky side of the gorges, keeping together in small flocks. Being very much the colour of the sand, these little doves may easily escape notice, but it is easy to approach close to them. A writer, who has travelled in Australia, says of them: "These charming little birds are so tame in their natural state that they will hardly trouble to move out of the way of the horses' hoofs as one rides along some track or primitive road in the Australian bush; and their soft coo is heard on all sides."

When disturbed, these birds rise with a whirr like a quail, but when fairly on the wing their flight is a gliding one. They can run very fast, and nest on the ground, laying two eggs, creamy white in colour and with a dull surface. The nest, composed of a few straws, is just a slight depression in the ground, often close to a tussock of porcupine grass. Mr. Keartland tells us further that one of his camel drivers found a nest "containing two young ones nearly able to fly. They were entirely brown, but others probably a week older were found, which had developed the black and white on the throat and head, which were invisible on the nestlings, as the feathers had not formed on these parts." The flesh of the Plumed Ground dove is very white, and is said to be delicious eating.

LIFE IN CAPTIVITY.

I cannot write much from my own experience of keeping the Plumed Dove, for the one specimen I possess I have had such a short time, and one I had some years ago only came to me on its way to someone else. Mr. Seth-Smith, however, gives us some very interesting notes of these little doves. He tells us how he kept five specimens, two cocks and three hens, but they fought so amongst themselves that he found that it was impossible to keep more than one pair together. Then, too, like the Bleeding Heart pigeon, the cock bird seems given to chasing and tormenting his own hen, though at the same time he may be very fond of her, and a minute before may have been caressing her most affectionately.

Mr. Seth-Smith put his one pair of plumed doves (he had sent the other three birds away), into a large out-door aviary, but within an hour the doves began to worry the Quails and Hermipodes so much that the little tyrants had to be taken away and put in a smaller aviary, the outer part of which was turfed. The hen laid two eggs very shortly afterwards, and at once began to sit, though she had made no nest. A terrible thunderstorm, however, caused her to desert the eggs, and though she laid several clutches later she never incubated them.

The cock, when cooing to the hen, bows up and down, with outspread tail and wings, showing off his purple metallic patches very bravely. Mr. Seth-Smith's birds became so tame that when he entered the aviary the cock would run up and start displaying and then make a little charge, uttering quite a savage "coo" as if to show the aviary was *his* and no mere mortal had the right to enter.

The Plumed dove is not delicate, and possibly might winter out of doors provided it had a dry warm shelter to go into. These doves are fond of grass seeds, and if the aviary has no turf run, a piece should be dug up and a sod placed for them to peck at.

In 1795 a pair of these birds nested at the Zoological Gardens and hatched and reared two young ones.

AUSTRALIAN CRESTED PIGEON.

(*Ocyphaps lophotes*).

Habitat.—Interior of North and East Australia, from Port Darwin and Port Essington to South Australia.

Length.—About 12 inches. Shape, well proportioned and graceful.

Colouring.—The head, face, throat, breast, and abdomen grey. A crest of blackish plumes on the head; the nape brown-grey, back and rump olive-grey. The sides of neck and breast have a pinkish wash. The wings on the shoulder parts buffish grey, the feathers being tipped with black, giving the wings a barred appearance. Lower down the wing becomes metallic, first a broad band of green and white, then a band of purple; the tail feathers are also metallic, but in a lesser degree than the wings. The eyes are buffy orange, the naked skin round them pink, the bill olive-black, the feet and legs pink-red. The female similar to the male, but rather smaller.

WILD LIFE.

Captain Sturt says of the Crested Pigeon: "The locality of this beautiful pigeon is always near water. It is a bird of the depressed interior (parts of the interior of Australia are *below* the level of the sea, reminding us of the Dead Sea, another

sterile hollow on the earth's surface), never ascending to higher land, where there are extensive marshes covered with Polygonium geranium. In the river valleys, on the flats of which the same bramble grows, Ocyphaps lophotes is sure to be found, but there is no part of the interior over which I have travelled where it is not, and it is very evident that its range is right across the continent from north to south."

Campbell tells us how fond the Crested pigeon is of water—that it flies *into* it, and drinks like a horse, sucking the water in, and stays for a little time by the water-pool after it has finished drinking. He also mentions the whistling sound of its wings when in flight, and how it jerks up its tail on alighting on a bough. It is few of us who have had the pleasure of watching a captive Crested dove enjoy its liberty—having escaped from an aviary—with the happy ending to the owner of recovering it in a few hours. A writer who had this experience was much struck by the bird's flight, which was almost straight up into the air like a rocket, "clapping his wings against his body all the time as he ascended, then he held up his wings and descended rapidly at a very acute angle till he reached about the same level from which he started, and then he flew away and alighted on the top of a larch tree about a hundred yards off, and up went his tail as he poised himself, which he did without difficulty on the thin twigs." As the hen was being used as decoy in a trap cage this was probably the cock's love dance, for he went through the performance again and again. His crest when flying low was always carried on his neck, and the rapidity of his flight very great; he did not even check it when alighting, but just threw up his tail to arrest his momentum. The flesh of the Crested pigeon is said to be neither very tender nor yet well flavoured. The nest is very fragile, and is built in low shrubs in exposed situations; two eggs are laid.

LIFE IN CAPTIVITY.

Most people who have kept any foreign pigeons have kept the Crested or Marsh pigeon, for it is a general favourite, being very hardy and easy to breed, so many as five broods being bred in one season. It is, however, a bad-tempered bird towards others of its tribe whilst nesting, and one pair I had were most disturbing—they had a mania for sitting, and sitting well, on other doves' eggs, each bird taking a separate nest; they even hatched one Necklace dove's egg.

At last I gave them a small aviary to themselves, and here they brought up several young ones. The young birds are very pretty, soft grey in colour, with tiny crests even before they leave the nest, but the eyes are dark, and the skin round them dark also, though at two months old it is red, as in the adult bird. The parents are very devoted, and one of my young ones was still being fed at the age of five weeks old. The late Mr. Cresswell had one young Crested dove that was so precocious that at 13 days old it flew from its nest to a high perch.

I noticed that when my cockbird was angry he would always lower his crest flat before he made an attack on another bird, and the ordinary coo (which is more like a bark and sounds like "whuff, whuff") was changed for a snapping noise with its beak, rather like the sound made by an owl. Even in so small a space as an aviary the Crested dove still retains its habit of jerking up its tail when alighting, and very graceful it looks when doing it, for it is a most shapely bird, and its upright crest of fine hair-like feathers (which look as if they had been wetted and then brushed to a point) give it a very distinguished appearance. When cooing to the hens my cock birds used to spread their tails like fans, arch the wings above the back, and so display all the beautiful metallic colours to the best advantage, bobbing up and down meanwhile as if they were on springs. In one instance only have I heard of a cock showing off by trailing and spreading his wing.

AUSTRALIAN CRESTED PIGEON.

Photo by Mr. D. Seth-Smith.
From The Avicultural Magazine.

Once I had a hen Crested dove that in some un-

known way injured her wing and was never able to fly again. I placed her a sort of ladder (made of a sloping branch) up to the fir boughs that were lashed to the aviary walls, and she was soon able to mount up to the highest point, right up under the roof. She was apt, however, if startled, to lose her balance and fall, and, as the hurt wing was of no use to her, she fell rather heavily. Unknown to me this caused a large raw wound in the lower part of the poor bird's breast, but it did not bleed, and was so covered by feathers that I did not for some time discover it. It was so large a hurt that I was in two minds whether or not to have her destroyed, but she was spared, and the cause of her accident being removed, she quite recovered, the wound entirely healing.

Though her life was now spent nearly on the ground (so low down she could not injure herself), this dove lived many years, and died chiefly from old age. I should never again allow a crippled bird to mount too high. Doves cannot cling like parrots, and so save themselves a fall. A little perch, made of a broom handle, costing 2d., can always be nailed across a corner of the aviary, and so protect the bird's feet from the danger of getting dirty and chilled, as they would be if compelled to always be on the floor.

At Woburn Park the Duke of Bedford has a flock of wild Crested doves, and about 40 specimens were turned out loose at the Zoo a short time ago as an experiment. It seems to have answered, for later one of the keepers saw a group of 14 feeding, and many were young birds.

This dove varies much in the colour of its plumage. I have had birds deep slate grey, and again others the most delicate shade of pale ash. The latter are the prettier to my thinking, but the metallic shades seem deeper and richer in the darker birds.

The Crested was first bred at the Zoo in 1872, and has been often bred in private aviaries. The value keeps always about the same, namely, 20/- for an adult pair of birds. It is a very hardy dove, especially when one considers the great heat it lives in in its native country. I have known birds desirous to nest in January, with 14 degrees of frost.

CHAPTER IX.

SUB-FAMILY GEOTRYGONINAE.

The Rufous Dove.
,, Solitary Ground Dove.
,, Violet (or White-fronted) Dove.
Wells' Dove.
The Partridge (or Red Mountain) Dove.
,, The Bleeding Heart Pigeon.
,, Wonga-Wonga Pigeon.
,, Black Bearded Dove (or Spanish Partridge).
,, Franciscan Dove.
,, Malayan Ring Dove.

THE RUFOUS DOVE.
(*Leptoptila Reichenbachi*).

Habitat.—South Brazil and Uruguay.

Length.—10 to 11 inches. Shape, long legged, but stoutly built.

Colouring.—Adult male—Top of head and forehead whitish grey, back of head purplish. Cheeks, throat, and upper breast ruddy vinous, changing into drab white on the lower parts. Wings and back olive brown, with blackish quills to the wings. Tail feathers brown, changing into black with white tips. Legs red, beak slate. Iris straw-coloured. A beautiful purple wash, like bloom, goes over the shoulders. The hen is very similar to the cock.

WILD LIFE.

Dr. Butler tells us that Burmeister regarded the Rufous dove as one of the commonest kinds he met in the forest region. He did not find it in the open, but only in the narrow forest paths, where it could easily escape danger. It builds its nest rather high up amongst the thick trees.

LIFE IN CAPTIVITY.

The nesting of my Rufous doves has always been one of the pleasantest incidents in my birds' annals. It is six years ago since they nested, and I still have my old cock, but from some wing injury he is now unable to fly, though he keeps very healthy and strong.

I bought a pair of doves in 1903 that were supposed to be Rufous doves, but only the hen bird was true to name, the other bird being a cock Solitary Ground dove; these two birds nested, but it came to nothing. In November of this same year I bought a true pair of Rufous doves, and these birds were both alike in plumage. They began to nest in March, 1904, but the eggs got broken and the nests were failures. I then put my first bird in the same house, and the cock of the true pair quickly turned to her, forsaking his own mate, and three or four days later they were sitting. The three birds agreed, but I thought it better to remove the odd hen into another aviary, and here she formed a great friendship with a Violet dove that could not fly. It is a curious fact worth mentioning that after it became friends with the Violet this Rufous always kept to the ground,

though it could fly quite well when they were first put together.

Meanwhile the pair of Rufous were sitting well, and on April 26th the first egg was hatched. The aviary the Rufous were in was only about 16 feet by 6½ feet, and in it were also pairs of Solitary Ground, Aurita, and Bronze-wing doves, and at the same time all these four pairs were nesting, and *agreeing*, except for a small fight just at first between the cock Rufous and cock Aurita.

The Rufous were ideal parents; they did not both leave the nest till the young were nine days old. The nest was very high up, but on May 8th I saw the old birds feeding one young one; it was olive-brown in colour, with white underparts and grey forehead, a white streak running from the beak over the eye. The next day I saw the second young bird; the one I took to be the cock had a much greyer forehead than the other.

On May 13th, when the young birds would be about 17 days old, they both left the nest, reaching the ground in safety. The Rufous family made such a pretty picture when I first found the young ones out, for all four were nestling together in the straw (put to break the young ones' first descent) in a state of great pride and contentment. Next day one young one went back to the nest to roost, the other passed the night outside.

Two days after the little Rufous left the nest two small Bronze-wings followed their example, and the four baby birds used to sit together in the straw the greatest of friends. Now the young Rufous were out I could see them better. Their length was about 7 inches, their beaks long and dark horn-coloured, feet and legs dark crimson, the two outer feathers of the tail tipped with white. On the wings were light spots or marks (like those on a young Violet dove). These spots had nearly disappeared by the time the birds were about five weeks old; their foreheads were then becoming lighter, and in one bird especially the ruddy breast was getting very decided. The eyes of the young birds were dark, with a very innocent look in them.

The poor Solitary Ground doves had lost both their young ones when only a few days old. They used to watch the young Rufous with hungry eyes, and one day I saw the Solitary cock timidly preening their feathers. When he found the young birds did not mind he grew bolder, and began feeding them as well. It is no wonder that with this extra care added to that of their parents the young ones thrived.

The hen Rufous, "Millie," was one of the most loving, motherly birds I have ever met. Her heart seemed large enough to hold all comers, for she preened the young Bronze-wings, was devoted to her husband, lavishing the most affectionate caresses on him, and I need not say was a model mother to her own young, but she carried her affection further still, as you shall hear.

In another division of the same aviary was a case of great contrast. A poor little Necklace dove, just about the same age as the young Rufous, was getting weaker and weaker, its parents in their desire to nest again leaving it to slowly die of starvation. Seeing the poor mite had no chance where it was, I moved it into the house where the Rufous were. I put the little Necklace on the floor, but it was so weak it could hardly stand. I saw the eye of the Solitary Ground cock light up with pleasure. *Here* at least was a chance, but he dare not come to the rescue, though burning to do so, till he had seen what "Millie" meant to do, for he stood rather in awe of her. *She* acted very promptly, and at once took the matter into her own hands—or rather beak—for she went straight up to the young Necklace and began to feed it. It was very grateful, but "Millie" was evidently puzzled to find it so weak after her robust young ones, and still more perplexed when it tried to nestle under her for warmth. She covered it and was very gentle with it, but she could not well stay brooding it on the aviary floor all night, so I finally put the little Necklace under some Barbary doves; they took kindly to it, but it had got too weak to recover and died later.

After the Rufous had left the nest the Solitary Ground doves took to it (the old Rufous having chosen another site), but the young birds came still now and then to their old home, and it was pretty to see one on each side of the sitting cock Solitary —that good-tempered bird seeming quite to enjoy having them with him.

You will be sorry to hear poor "Millie" died a year or two ago. I found her one cold day looking ill, so brought her into a cage in the heated passage and the cock with her, fearing she would miss him. She got worse, and I then put her close to the stove in the "hospital box," of which I have told you already. This seemed to do her good, and with great care she recovered so much that after a time I put her back into a large let-out cage with the cock; but soon after she had a severe relapse, and died suddenly in my hands. She was a great loss—one I can never hope to replace.

The Rufous lays two white eggs, and the incubation lasts 16 or 17 days. This dove has been kept at the Zoo (two or three of my own young birds going there), and has been bred in several private aviaries.

THE SOLITARY GROUND DOVE.
(Leptoptila chloroauchenia).

Habitat.—South Brazil, Paraguay, Uruguay, and the Argentine Republic.

Length.—About 11 inches. Shape, strongly built, but shapely.

Colouring.—Adult male—General colour dark greyish; wings, tail and back olive brown, the long quill wing feathers being of a darker shade. The outer tail feathers are tipped with white, but the white is not noticeable unless looked at from below, or unless the tail is spread. The breast, throat, cheeks, and forehead are a lovely soft dull purple tint, the sheen on the neck and back of the head an exquisite blue green (like the green pearl in a shell). The under-parts white, the iris bright orange, the bill horn-coloured, the feet pink. The hen is very like the cock, but rather smaller, slighter in shape, and lighter in colour. The green on the neck is not so vivid, the purple bloom on the breast not so distinct.

WILD LIFE.

Dr. Sclater says of this dove: "It appears to be nowhere very abundant, and addicted to rather a solitary (presumably in pairs) sort of life, though sometimes three or four birds may be seen together. It spends a great deal of time on the ground, where it walks about under the trees rather briskly, searching for seeds and berries. The song is a single uninflected and rather melodious note, which the bird repeats at short intervals, especially in the evening during the warm season. When the birds are abundant, the wood, just before sunset, becomes vocal with their curious far-sounding note, and as this evening song is heard as long as the genial weather lasts, it is probably not related to the sexual instinct. The nest is a simple platform; the eggs two in number and white, but more spherical in shape than those of most other pigeons."

LIFE IN CAPTIVITY.

This is a rare dove, and seldom met with. I was fortunate in getting mine (in ignorance of what they really were) very cheaply.

I am very fond of the Solitary Ground dove. He is so harmonious in his quiet beauty, and looks as if he had been sitting in the moonlight and caught a little of its tints, just the same as the Rufous dove makes me think of the sunset and that its rosy shade had just caught his breast.

At first sight you might think both these doves plain and quiet-looking; wait till you have kept them for a time, and if you have a true love for the delicacy and harmony of colouring in doves you will learn to appreciate them properly.

Once only since I bought my birds have I seen the Solitary dove offered for sale; a small importation of seven birds arrived in England, but I do not know what became of them. The price asked was very reasonable.

My cock Solitary was sent me in 1902 with a hen Rufous dove, the two birds being said to be a pair; but the birds, though both belonging to the genus *Leptoptila,* were quite different. My true hen came to me in a strange way. A dealer, knowing my weakness for doves, offered me this single unknown bird for 5/-. I declined it, then fortunately changed my mind and bought it, only to find on its arrival it was a hen Solitary. For a long time this hen could not fly; she was strong and healthy, but her wings were very sore. She had evidently knocked herself very badly, and there was one long wound from end to end of each shoulder.

In 1903 I put my three birds, namely, the two Solitarys and a hen Rufous, together, two separate nests were started at the same time, and fertile eggs were laid, but I never reared any young ones. However, I had learnt this much, that my birds were a cock and two hens; for up to this time I was entirely ignorant as to even what the Solitary Ground doves were. Later I procured a cock Rufous, and these two pairs of doves and a pair each of Aurita and Bronze-wings were all put into the same aviary. At one time all four pairs were nesting together, and all brought up young ones that season.

The Solitary doves nested in April; two fine young ones were hatched, but both died when a few days old. There were at the time two young Rufous doves just out, and the Solitary cock used to help to feed these young birds and preen their feathers.

The next attempt of the Solitary doves was in the Rufous doves' old nest (they having chosen another site), and for some time the little Rufous used to return to their old nursery, sitting one on each side of the cock Solitary as he sat, all three being as contented and pleased as possible. This second nest was started about May 30th, two fertile eggs were laid, but when incubation had been going on for about 13 days one egg was unfortunately broken. The other egg hatched into a fine young bird, and as might have been expected received the greatest care and attention from its parents. The young Solitary did not seem to care to return to the nest, having once left it, as the little Rufous had done. It was one of the strongest and most active young ones I have ever bred, and after a few weeks was almost as large as either of its parents.

*1, 2.—Australian Crested Pigeon (adult and young bird).
3.—Crested, Senegal, White-winged, and Turtle Doves. 4, 5.—Rufous Dove (cock).
6.—Red Mountain Dove. 7.—Red Mountain and Black-bearded Dove.
8.—Crested and Senegal Doves.
*9, 10.—Plumed Ground Doves. 11.—Violet Doves.

Photographs by Mr. H. Willford.

The young one's colouring on leaving the nest was very like that of the old birds, but it lacked the purple tint on the breast, the sheen on the neck, and the orange eyes. Its head was greyish, with a light dun forehead, and the back of the neck dark grey. The breast dun grey, shading into pure white on the under parts; the back dark dun; the wings dark brown, with two bands of copper across each (in a later nestling these bands were lacking, but the wings were spotted with copper instead; perhaps this bird being much weaker lacked enough feather to make a perfect line). These lighter markings disappear when the birds are a few weeks old. The tail of the young Solitary was olive-dun, with the three outer feathers on each side tipped with white, and the next two pairs with lighter tips.

In July the Solitary doves nested again, but failed to rear any young; later still another nest was made and one young one hatched, but when still in the nest it began to fail, and one day was found dead. I think it was really hatched too late; the days and nights had begun to be cold, and the little thing did not thrive properly.

Another young bird hatched in 1908—some four years later—was most carefully tended by a hen Bronze-wing, who brooded both it and her own young one. The two young doves were great friends, and the Solitary used to nestle up to the Bronze-wing, but unfortunately its parents neglected it and it died a few days later.

I have had the Solitary doves some eight years, and every year they nest often and fertile eggs are laid. Yet my first young one was my last; I have never reared a young Solitary to maturity save in this one instance; it seems very strange, for the breeding of this one particular bird was so easy. I have never known this pair of doves to be tiresome with others of their tribe. I have them still, and they are quite gentle to the other inmates of the aviary. The young bird, who must now be about six years old, I gave away to a friend.

This young one, unlike his parents, is a very bad-tempered bird, though I believe a good deal of this is due to his loneliness in having no mate. My old birds are at the present time—June, 1910—nesting again, they having had several eggs this season, but so far no young ones. The hen is a very nervous bird, the cock being far steadier; some time ago he lost the sight of one eye, probably through a stab from another bird; you could not tell, unless you held him in the hand, that the eye was injured, so it has fortunately not spoilt his beauty.

I consider these doves very hardy; I cannot find any record of their being kept at the Zoological Gardens.

THE VIOLET (OR WHITE-FRONTED) DOVE.

(*Leptoptila jamaicensis*).

Habitat.—Jamaica.

Length.—About 11 inches. Shape, rounded, but well proportioned.

Colouring.—Adult male—The forehead, cheeks, throat, breast, and under-parts snowy white. The top of the head a soft ash-grey. The back and wings olive brown, but the shoulder butts are very pure white and the long wing quills blackish. The tail is olive-brown above, and black and white beneath. The back and sides of the neck the most beautiful metallic colouring, changing in every light, the chief colour being pinkish, shot with golden green and again with bluish green, first one colour showing and then the other. The pinkish colour is more noticeable on the sides of the neck, and in some birds comes down so low as to form a background for the white shoulder butts, throwing up their whiteness in a most striking way. The feet are crimson, the beak blackish grey; a dark line runs from the beak to the eye. The iris is light straw-colour surrounded with a ring of reddish skin. The female is smaller and slighter than the male, her forehead more greyish, the white parts not quite so pure.

WILD LIFE.

Gosse tells us that the Violet dove is chiefly found in the upland districts; he notes that it is a species that habitually lives on the ground, walking about picking up various seeds. The physic nut, orange pips, and sop-seeds, as well as large fragments of the mango-seeds (chewed by the hogs), form some of its favourite foods. The flesh of the Violet dove is considered good to eat, being "white, juicy, and well-flavoured, without being liable to bitterness."

It has no regular roosting-place, often spending the night on some low log or stone near the place where it fed at nightfall. The nest is often built in the log-wood, or if in the woods a fairly tall tree is chosen. The nest is composed of a few loose twigs and some leaves in the centre. The Violet dove is often caught by the natives, being easily taken in springes. The coo of this dove is five, very melancholy notes, and the negroes, who delight to translate the voices of birds into words, ascribe to it the call of "Rain-come-wet-me-through."

Gosse notes what a gentle bird the Violet dove is, and tells how he once took one in his hand, just caught in a springe, and it nestled comfortably down, "permitting its pretty head and neck to be stroked, without an effort to escape, without a flutter of its wings."

LIFE IN CAPTIVITY.

Of all the many kinds of doves I have kept, there is none I love so much as the Violet dove. To see a fine male bird in perfect plumage is a feast to one's eyes; the snowy whiteness of the breast, the glorious beauty of the neck, no words can describe; it must be seen to be realised.

My first pair of Violet doves came to me in October, 1901, they being then very rare in England. A gentleman had privately imported a few, and one of these was exhibited at the Crystal Palace Show in that year. I paid 25/- for my pair of birds; neither could fly, and one of them, a few months later, broke its leg and died. My third bird was a splendid specimen that I paid 22/6 for. He had been hand-reared by the natives, and was one of the finest birds I have ever seen, but to my disappointment he would not take to my remaining bird.

In the meantime, seeing my new arrival had begun to pine away, I wrote to try and procure his original mate, but I was too late; she had been sold to a lady in Germany. In April, 1902, however, my friend received one odd bird, in a consignment of birds and reptiles that nearly all perished on the way, through delay in transit.

I was warned before getting this bird that it was in terrible condition though healthy, but half a Violet was better than none at all, though I must confess to feeling a great shock when, on diving into the travelling hamper, I fetched up about the most featherless bird I have ever come across; it gave me quite a creepy feeling. But the bird was healthy enough, and after a few months' nursing came round, and very fortunately proved a hen.

Both I and my beautiful cock "Narcissus" were delighted, and at once, on seeing her, he began bowing to the ground and cooing, puffing out his neck till it was a sheen of rainbow colours.

The birds soon began to nest, but though the eggs were fertile something always happened—the eggs were gnawed, broken, or thrown out. The birds sat well, but were very fond of *both* sitting together on the nest, a proceeding always fraught with danger to the eggs. At last I had so many disappointments that I determined I would not allow myself to hope any longer; it was always the same story repeated, and "he that is down need fear no fall." I would let the Violets do what they liked, but I would not expect anything from them.

This went on until the second week in June, 1903, when two young birds were hatched. The doves had been perpetually laying eggs and sitting since the middle of February in that year, and I believe a good deal of their failure was due to a little Combasou who gnawed the eggs. Unfortu-

FIG. 1.

FIG 2

FIG. 3.
VIOLET OR WHITE-FRONTED DOVE.
1.—YOUNG COCK.
2.—YOUNG BIRDS JUST LEFT NEST.
3.—OLD COCK, HEN, AND YOUNG COCK.
From The Avicultural Magazine.

nately it was some time before the culprit was discovered. Again, I believe the fault was partly the doves' own, for they *would* sit together in the nest, and one or more young birds was smothered.

Mr. Castle-Sloane, who succeeded in breeding the Violet dove very shortly after I did, gives the period of incubation as 12 to 15 days. I do not know how long my own birds sat, for the nest was high up, and in such cases it is difficult to note it. Through the bottom of the wicker nest-basket I could see the young birds moving inside the nest, but the parents guarded them very closely.

On June 24th the first young one left the nest, being then about a fortnight old. The old birds might have known what a rarity the little nestling was, for they were in a state of the greatest excitement. "Narcissus" being left to guard the little daughter in the nest, whilst "Bessie," the hen, took the small son into her sole charge. She was intensely proud of him, and, though really a good-tempered bird, her anxiety made her rather irritable to other birds in the aviary.

I was away from home at the actual time the young Violet came out of the nest, and only returned the day after the event, when I found the young one very snug and happy on a bed of hay in a large (lidless) box that my brother had thoughtfully put for it in the aviary, to protect it from the attacks of other birds and other dangers that might have befallen it.

Three days after the first young bird left the nest the second followed; for some hours it had been getting restless, and came down late in the afternoon. This young bird was rather smaller than the other and whiter on the forehead. Their colouring was as follows :—Eyes brown; forehead, throat and breast whitish drab; back and wings chocolate brown, with chestnut spots on the wings (like the spots on a Necklace dove); under-parts white, outer feathers of tail white, remainder of tail grey brown; legs dirty flesh-coloured; length, between six and seven inches.

The parents took the greatest care of the young birds, and "Bessie" would sit in the sun with a baby dove on each side of her. I never noticed the young ones being fed; the eldest was seen to be pecking seed when about a month old.

On July 11th there was one of the most terrible storms I have ever seen, with thunder, lightning, and a torrent of very heavy rain. I hurried down to the aviary only to find the baby cock thoroughly enjoying himself and spreading out one tiny wing to catch the rain. Both young birds got very wet, but took no harm. The wing spots in the young birds had almost disappeared by July 21st, and about ten days earlier the sheen had begun to come in the neck of the elder bird, and the violet side-neck patch to show; by the end of July there was not much difference between the old and young birds.

Both the old and young Violet doves were very fond of shelled and cut-up peanuts, and it was by this inducement that I managed to take their photograph. The bird in the foreground is "Narcissus," but it does not do him justice.

The Violet doves nested again, but both young died in the nest; they looked as if they had been crushed—possibly they were smothered by the old birds sitting together. "Narcissus" came to a sad end about 5 years later. He was fought by another dove (I suspect a Bleeding Heart) and both his beautiful eyes blinded. He only lived a few days, for his spirit seemed quite broken, and he would not eat.

The young hen also died in a tragic way, in 1904. I was setting the trap-cage to catch a canary, and left the trap open and baited. As a rule the birds soon learn to go in and out, but apparently the young hen Violet would not feed. She was found dead, and I was quite at a loss to know from what cause. To my surprise and distress a post-mortem revealed the fact that she had died of hunger. I have never cared to use the trap-cage since, but prefer to catch the birds by hand.

Since the days of "Narcissus" I have had several importations of doves privately sent me from Jamaica. I shall never forget what a lovely sight about 14 or more Violet doves are when seen together. I have never bred any since my first two, though I once nearly reared a pair under some Barbary doves.

The Violet is a hardy dove; it was first kept at the Zoo in 1867; the value varies very much, but I should consider a good pair worth 25/- to 30/- or more. I paid £2 for a pair of birds in very bad feather some years ago.

WELLS' DOVE.

(*Leptoptila Wellsi*).

Habitat.—Grenada, Antilles, the Island of Tobago.

Length.—About 10 inches. Shape, well proportioned.

Colouring.—Adult male—The upper parts glossy olive, hind part of head and nape dark olive brown, washed with purple; forehead pinky white, shading into grey on the crown; chin and upper part of throat pure white; lower throat, cheeks, and upper breast dull vinous; lower breast and under parts white; wings and tail olive brown, feet crimson, bill black, the naked skin round the eye blue. The

hen is very similar to the cock; her forehead is less white and her colour rather duller. I have no notes on the wild life of this dove.

LIFE IN CAPTIVITY.

I have only once kept a pair of this rare little dove. I bought them in March, 1904, for the very moderate sum of 20/-. I found them very wild; they refused to let me come near them, and in dashing about the hen grazed her head badly. I did not find them very interesting; they were very like the White-winged dove, but not so pretty, being much the same colour and having the same sky-blue skin round the eyes, though of course the white band across the wings (which is such an attractive point in the White-winged dove) was absent.

My birds did not nest whilst I had them, and eventually one died, and I was left with the odd bird.

In 1897 the late Mr. O. E. Cresswell received an importation of 6 Wells' doves from Tobago. He was much struck with the colour of the blue skin round the eye, and describes them as follows: "Their tints are soft and pretty—back olive-brown, the back of the neck having a purple sheen, under parts white shading into pink. I have not found them interesting; after nine months they are still shy, hardly ever utter a sound, and take no notice of each other. I think I made a mistake in not putting them out last summer." Dr. Butler had a hen Wells' dove that laid between three and four eggs every month and sat by herself the full time on all eggs she did not break. She died in 1906, having been laying and sitting on clear eggs continuously since the beginning of the previous year.

A specimen of Wells' dove was presented to the Zoo by Mr. S. Wells in 1886. Mr. J. C. Pool received about five of these doves in 1898 from Tobago. He considered them one of the most timid doves he had ever met, and somewhat irritable, running to drive any small birds away that might perch on a branch near.

THE PARTRIDGE (OR RED MOUNTAIN) DOVE.

(*Geotrygon montana*).

Habitat.—Tropical America in general (including West Indies), north to Cuba (accidentally at Key West) and Eastern Mexico (Mirador), and south to Paraguay, Bolivia, and Peru.

Length.—About 9 inches. Shape, rounded, with rather short tail.

Colouring.—The adult male has the upper parts bright chestnut, more or less flushed with a purple iridescence, chiefly on neck and back. Breast pale purplish-brown, softened to white on throat and chin; a band of deep chestnut runs forward from the ear to the throat; under parts and tail coverts buff white (Gosse). The hen is quite different from the cock. The top of the head and back is chocolate brown, with a slightly greenish tinge, the tail is brown; forehead and cheeks chestnut. The top and sides of the upper part of the breast is also brown, but warmer and rather lighter in shade than the back; the chin, lower breast and sides buff. The beak basal half crimson, the remainder horn-colour; the legs are flesh-colour, the iris very pale yellow-brown, the skin round it being the same colour as the beak, namely, rich crimson. The hen is slightly smaller than the cock.

WILD LIFE.

Gosse writes of the Red Mountain dove that it prefers a well-wooded country where the woods are filled with bushes as well as trees. He says: "It is essentially a ground pigeon, walking in couples or singly, seeking for seeds or gravel on the earth." He noted that it fed on the fallen berries of the pimento, the physic nut, and once a pair of these doves were seen eating the large seed of a mango that had been crushed. Small slugs have also been found in its gizzard, and it is very fond of the ripe berries of the sweet-wood.

On two occasions Mr. Gosse made a close inspection of nests of this dove. He says: "As we crept cautiously towards the spot the male bird flew from it. I was surprised at its rudeness; it was nothing but half-a-dozen decayed leaves laid one on another, and on two or three dry twigs, but from the sitting of the birds it had acquired a slight hollowness, about as much as that of a skimmer. It was placed on the top (slightly sunk among the leaves) of a small bush, not more than 3 feet high, whose glossy foliage and small white blossoms reminded me of a myrtle. There were two young, recently hatched; callow and peculiarly misshapen, they bore little resemblance to birds."

In a second nest were two eggs of "a very pale buff colour; sometimes, however, they are considerably darker." The poor little cock was sitting on this nest when he was shot dead. To shoot this gentle little dove *at all* would seem cruel sport, but to shoot a "sitting" bird seems to me no sport at all, but wanton barbarity. In the days when Gosse wrote, some 63 years ago, the bird life in Jamaica was different from to-day. He tells us of a boy who "caught 20 or more" of the Partridge dove, "in springes during two or three days in February." Mr. Sutcliffe, who has just returned from Jamaica this year, says of the Part-

ridge dove that it is "in danger of extinction, the hens are especially difficult to obtain."

I personally have found the cocks harder to get than the females. I think the latter seem stronger than the male birds.

Jardine tells us that the Partridge dove lives constantly on the ground, and roosts on the lowest branch of a tree; he further adds, its nest is built *on the ground,* and that the young ones can sooner follow their parents than those "which nidificate at a distance from the ground." "It inhabits elevated and rocky districts, where it runs with great swiftness." It must be remembered, however, that Jardine wrote so long ago as 1835, and old records are not always found to agree with modern observations.

LIFE IN CAPTIVITY.

It is some years ago since I first kept this gentle little dove. If I remember rightly, the first two birds I had were never able to fly. I bought them as a pair, being ignorant of the difference of colouring of the sexes, but both were cock birds.

The latest pair I had should have done well, for they had been used to aviary life in Jamaica before they came to me, but I was so unfortunate as to lose the cockbird; the hen I still have, and she seems strong and healthy, and keeps in very good plumage.

She is out now for the summer, but must be brought in for the winter months, as this dove cannot stand too much cold.

The Red Mountain dove is so gentle and timid a bird that it will allow any dove to torment it, and so it is rather difficult to know with what other doves to place it, if you are not fortunate enough to be able to give a separate compartment to each pair of birds. In my case some Senegal doves were in fault, and when I caught the Partridge doves to remove them I was shocked to find how thin the cock was; he began to eat at once on being put into a fresh place, and I fear he must have suffered without my knowing it. For a time this bird looked better, but eventually died. His hen is the bird I still have, and she seems quite happy and contented, not caring to come much into the open, but passing most of her time in the inner shelter.

This hen has a mania for nests, and used often to sit in the turf-lined box where the Partridge Bronze-wings were sitting, and these birds being most amiable themselves never resented her presence. My hen is now interested in the nest pans I have put up for my Bleeding Hearts, and I am sure if she had a mate she would nest.

A correspondent in Yorkshire had two hens a little time ago, and another gentleman in Staffordshire has two hens and a cock. He tells me that one of the hens is so tame that she will feed from his hands, although he has only had the birds a little time.

Mr. Sutcliffe was so fortunate as to secure four pairs of Partridge doves during his recent tour in Jamaica, and as this dove is getting so rare in its native land it would be well if it could be saved from extinction by being bred in English aviaries, but as far as I know this has only twice been accomplished—once at the Zoo in 1863 (it was first kept there three years previously), and once by Sir William Ingram in 1905.

All the specimens I have kept were imported privately, and the last time I wrote for some they could not be had. Last May three birds (a cock and two hens) were offered for sale in England for about 60/-, but it is a dove that is only seldom in the market.

Sir William Ingram has given us some interesting notes on this pretty little dove. He found it the most friendly and amiable of all his doves, and even after the hen-bird had to have a toe amputated she still remained as tame as before the operation.

The first nest built by the Partridge doves, during their second season in the aviary, was disturbed by other doves. The nest was made of sticks and straw placed on a beam; the second nest was built in an old hamper nailed against the wall. Here, though much disturbed, the Partridge doves reared one young bird; the second egg, though fertile, did not hatch; it was a fawnish colour. The young bird on leaving the nest ran about like a partridge and very seldom used its wings; in colour it was a very dark brown on the upper parts, the feathers being edged with rufous; the legs were light red.

The parent birds kept much to the ground, seldom flying from the floor of the aviary, although they built their first nest at the highest elevation they could find. This may seem strange, but I have known such strictly ground birds as quails lay a clutch of eggs in a pigeon nest basket fixed some seven feet or more from the ground.

BLEEDING HEART PIGEON.

(*Phlogoenas luzonica*).

Habitat.—Luzon, Philippines.

Length.—About 10 inches. Shape, long-legged and stoutly built.

Colouring.—Adult male—Forehead white shading into delicate grey; back of crown to eyes dark purple; back of neck, upper back and shoulders (coming right down the sides of the neck to the wings) washed with very rich opal tints. In one cock I have the lights change from green to blue;

in another less green and much more purple. This metallic green also shows on the lower back, which is blackish brown, as are also the long wing feathers and the tail. The wings are clear light grey crossed by two distinct bars of blackish brown; the shoulder also shows some greenish reflections. The cheeks, throat and breast are white, being very pure on the first-named parts. In the centre of the upper breast is a blood-red irregular patch, looking as if the bird were mortally wounded. The feet are crimson, the beak slate-black, the iris purple. The hen bird is smaller than the cock and more slightly built, the neck especially being more slender. The metallic green is less vivid in the hen, and sometimes the under-parts are buffish.

YOUNG BLEEDING HEART DOVES.
From The Avicultural Magazine.

WILD LIFE.

The Bleeding Heart is often found for sale in the Manila market, being a very favourite bird of the Spaniards. This pigeon is commonly known as Puñalada, meaning "stabbed with a dagger." Very little seems known of its wild life. There is a legend that there is a variety pure white except for the "heart," but I think this must be a woodland myth of the natives, for I have never heard of a live specimen, though I have seen it illustrated in an old book on pigeons.

LIFE IN CAPTIVITY.

I have kept *many* Bleeding Heart pigeons, for I must confess to a great weakness for them, and a desire (wisely ungratified) to buy everyone I see offered for sale. At the present time I have nine specimens—four true pairs and an odd hen. Three of the cocks I have had for some time. One of these was bought nine years ago last March for the very small sum of 10/-, and this price included a white Java sparrow. I think the dove's owner must have got tired of keeping an odd bird, for I can never understand why he sold him for so little.

In the same year, in September, I bought a supposed hen from a gentleman in Scotland, and the joy of the first bird was great—he puffed himself out and cooed and sat on the same perch dressing the new arrival's feathers; at night they were on the nest-basket, and the cock-bird sat in the nest and quivered his wings; and yet, would you believe it, all the time these birds were two cocks, and I never found it out until some time later.

I advertised for a hen-bird, but got no response—nothing at all save a letter from a lady, a complete stranger to me, asking if I had a spare cock to part with, as she had a hen that had laid a great number of eggs and she had spent a small fortune in trying to find a mate for her. This letter put a bold plan into my head. My two cocks were such beauties that I did not want to part with them, but at the same time I had a great wish to breed this dove; so I wrote to the lady and said, will you let me have your bird for the summer, and if I can rear any young ones we will divide them? After a few days an answer came that "Joey" was to come to me. . . . . The letter went on to say how very much the lady valued her pet, for it used to let her catch it without being frightened, and it would often come and settle on her head, and coo and flutter its wings when she spoke to it.

The affection the lady had for the bird was evidently so genuine that I began to regret what I had done. Suppose the bird died whilst with me! I began to imagine all sorts of dreadful fates for it, and felt quite uneasy. But in bird-keeping disasters come soon enough without anticipating them. "Joey" arrived in March, and never had a day's illness till she died between one and two years afterwards. She had many nests, and three young ones lived to be adult.

The first two were from one nest, and turned out later to be both cocks. They were two of the finest birds I have ever seen. I wonder if it is true that aviary-bred birds (where the parents have always had more than enough food to feed the young with)

are finer than wild caught ones that have not been reared on so generous a diet? It would be interesting to know.

These two cocks may be living still; I heard of them long after they left me. The third young bird, though it lived to be adult, was never strong, and died on the way to a new home in Ireland. Another very fine pair of young ones died in the nest. "Joey" was a most zealous parent; she would leave the nest to drive off a Picui dove that she considered was coming too close, and then quietly return to her treasured eggs. She finally died one winter, and was evidently a great age and possibly past breeding; but I think her life might have been prolonged if I had brought her into the heat during the cold weather. Bleeding Hearts cannot stand cold; perhaps it is their continual wandering on the ground that chills their feet, for the toes seem apt to suffer.

"Joey" was one of the plainest Bleeding Hearts I have ever seen; the skin on her head was all drawn, and most of it bare; this injury was done before I had her by a rat, her previous mate being murdered outright. My Scotch cock, "Jim," had lost his hen too, before he came to me, from the same cause, and I am sure in bird language they told each other this mutual trouble. They were a most devoted pair, and after "Joey's" death "Jim" refused to look at either of the pretty new hens I bought for him. Later on one of these hens scraped the top of her head, giving her a faint resemblance to the departed "Joey"; and after this, though it sounds strange, "Jim" took to her.

The Bleeding Heart is a dove you cannot force in its likes and dislikes; it must be allowed to choose for itself. I find the cocks have one very bad habit—some of them chase and worry the hens so during the nesting season that in one case a beautiful hen I had died; but perhaps I ought to say *one* cock was the chief wrongdoer, and he has steadied down as he has grown older.

The Bleeding Heart is not always good-tempered towards other doves. It is fond of mealworms, and delights in a little "soft food," ground nut, and ground biscuit. I really think the "soft food" is almost a necessity—besides its grain diet—to keep this dove in perfect feather.

When frightened the Bleeding Heart has a curious habit of running into a corner, where it stands for long with its back to you, the feathers held very close to the body, the head lowered. When the cock coos he throws himself right back, almost resting on the tail, and puffs out the breast and "heart" to quite an imposing size. I do not find that these doves care to nest if more than one pair of them is kept in the same aviary, but on the other hand, when put together for the winter in heat, they seem to delight in being in a little band, and to see them thus is one of the prettiest sights in my aviaries.

The young birds are rich chocolate brown in colour, with three distinct buff bars across the wings, and just a tiny red line down the breast to show you where the heart is coming later on. The wings are as if tucked up, and the beak very large and long. Two days after coming out of the nest my first young one could fly, though he had such short wings. It was a pretty sight to see the young birds standing on tip-toe beside "Joey," and kissing her face over and over again. They were also great friends with the little baby Senegal doves. "Joey" was much more with her young ones than the cock was.

At the present time you can get Bleeding Heart pigeons for about 45/- a pair, but they would not be aviary specimens. These are worth about 30/- each bird. It is a dove that is very difficult for anyone (who has not kept a good many) to sex; so many birds are often sold sexed wrongly, or not in true pairs.

I have heard an old legend about the Bleeding Hearts, but do not know if it is true as to its source. It is said that when Christianity was first preached in the Philippines the people were found to be heathens, but at the same time having a legend that long ago the Bleeding Heart pigeons had white breasts, but, on one settling on the Cross, and being shot by a Roman soldier, ever afterwards the bird had the red patch or "Heart of Remembrance." It is supposed Christianity had been preached to these islanders years before by a shipwrecked Friar, and that all his teaching was forgotten save this legend. I have been told that the extraordinary influence of the Friars over the native population in Luzon is proverbial, and was probably the main factor in determining their existence for three centuries under Spanish Government, the Philippines being discovered in the 16th century.

In an allied species of the Bleeding Heart, that lives in the Malay States, a similar legend is assigned by the natives; in this bird the red patch is not so vivid as in *Luzonica*, where the effect is most realistic.

This pigeon was kept at the Zoo so far back as 1861, and has bred there several times. I have never seen two Bleeding Hearts *quite* alike. In one bird the "heart" will be a little larger, in another perhaps smaller; a third bird has longer legs, and in a fourth the grey on each side of the breast

PLATE II.

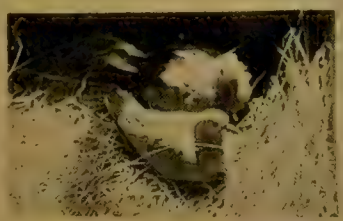
1

8

3

4

5



6

7

2

1, 2, *3.—Young Bronze-wing Pigeons. 4.—Young Brush Bronze-wing Pigeon.
5.—Young Rufous Doves. 6.—Young Senegal Doves.
7, 8.—Young Damara Turtle Doves.

* *Photograph by Mr. H. Willford.*

nearly meets at the throat. To a casual observer they may seem all alike, but to their owner there is just a little difference in the same way that they say no two sheep in a flock are exactly the same.

WONGA-WONGA PIGEON.

(*Leucosarcia picata*).

Habitat.—Eastern Australia, from Rockingham Bay, through the interior to Victoria.

Length.—About 15 inches. Shape, broad and heavy, with long strong legs.

Colouring.—The back, wings and tail leaden grey, forehead and chin white, cheeks pale grey, breast leaden grey, divided by a broad semi-circular white belt; centre of chest white, flanks and abdomen white, covered with black-dotted spots; bill purplish towards the tip, shading into pink nearer the head. Eyes very dark brown, the eye-lashes crimson, feet and legs pink-red.

The sexes are very similar, but the hen is rather smaller than the male bird. The young are very like the adult birds, but browner on the wing, and without the dark feathers of the sides.

WILD LIFE.

It is fairly common in the bushes of New South Wales, and frequents both dry and damp ground. The Wonga-Wonga is strictly a ground feeder; it only takes to the trees when disturbed. Dr. Ramsey says its deep and melancholy coo may often be heard in the woods.

Gould tells us that "to look for it on the plains or in any of the hilly open parts would be useless." "The Wonga-Wonga spends most of its time on the ground, where it feeds upon the seeds and stones of the fallen fruits of the towering trees under whose shade it dwells, seldom exposing itself to the rays of the sun or seeking the open parts of the forest. While traversing these arborean solitudes one is frequently startled by the sudden rising of the Wonga-Wonga, the noise of whose wings is quite equal to, and not very different from, that made by a pheasant. Its flight is not of long duration, this power being merely employed to remove it to a sufficient distance to avoid detection by again descending to the ground or mounting to the branch of a neighbouring tree." This pigeon's coo ("hoo" repeated four times) can be heard half-a-mile off.

LIFE IN CAPTIVITY.

The Wonga-Wonga is also known as the White-fleshed Pigeon of Australia. Its name of "Picata" is in allusion to its black patches, Picata being Latin for "besmeared with pitch." The flesh of this pigeon is white and is considered a great delicacy for the table in its native land. Gould tells us that it is "one of the most delicious birds for eating that can be met with anywhere."

Dr. Greene considered the Wonga-Wonga a dull bird in an aviary unless it had plenty of room. If confined in too small a space it would sit motionless for hours. The egg is white and rather round, and hatches in 18 or 19 days. The hen generally builds the nest almost alone, the cock helping very little. As a rule but one egg is laid at a time, though instances are recorded from Germany where two young have been reared, and that five or six times between May and the end of September.

Dr. Greene gave his birds grain of all kinds, especially maize and dari; he also mentions that the Wonga-Wonga preferred *soaked* maize to anything else; besides the grain he gave soaked bread, not only to the pigeons, but to all his birds, the bread being soaked for a few minutes in cold water and then lightly squeezed and crumbled.

The Wonga-Wonga is very fond of bathing, and besides drinks a good deal, so it should always be provided with a good supply of water.

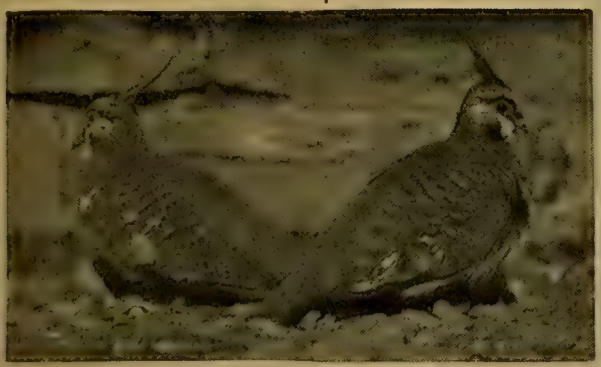
I have only kept two specimens of this very handsome pigeon. I do not know if they were a pair, but I never bred any young ones. One of the birds had a crippled wing when it was given to me, and so was forced to spend most of its time on the ground. The Wonga-Wonga is a quiet harmless bird, and in spite of its sober colouring very attractive. When my birds used to walk up and down the aviary floor they looked very imposing and dignified, and the curious neck markings used to rather remind me of a Mayor or Alderman in his chain of office, and the pigeons' stateliness added to the effect. You felt as if the smaller doves would hardly *dare* to take a liberty with them.

Dr. Butler, though he greatly admired the Wonga-Wonga, was very disappointed in them when he came to keep some of his own. The cock's coo was an annoyance to all who lived near, and the nesting was not a success, for the hen-bird laid time after time on some bare branches, and the eggs continually dropped through and were

PLATE 12.

1

4

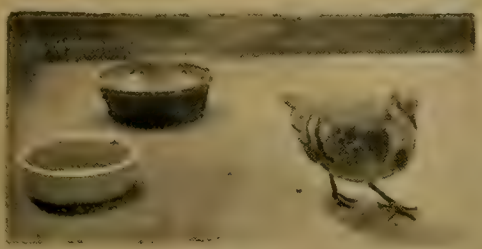


5

6

7

3



2

1.—Bleeding Heart Pigeon and Rufous Pigeon. 2.—Bleeding Heart Pigeon.
3.—Bleeding Heart Pigeon and Black-bearded Doves.
4.—Black-bearded Doves. *5.—Plumed Ground Doves.
6.—Francisian Dove. 7.—Wonga-Wonga Pigeon.

* *Photograph by Mr. H. Willford.*

spoiled or broken. In vain Dr Butler rearranged the spot, making the branches thicker; the pigeons undid all his work with the same result as before —more broken eggs; finally the hen deserted the nest in November, and began to mope and died.

The Wonga-Wonga was bred at the Zoo so long ago as in 1859, and many times also since then. It is seldom that this pigeon is offered for sale, and I cannot say what would be their value at the present time.

THE BLACK-BEARDED DOVE (OR SPANISH PARTRIDGE).

(Starnaenas cyanocephala).

Habitat.—Cuba (and Florida Keys).

Length.—Over 12 inches. Shape, strong and plump-looking.

Colouring.—Adult male—Crown of head rich cobalt blue, bordered by a black band passing through the eye; this band again is bordered by a second one of pure white reaching from the beak to the back of the neck. The sides of the chin cobalt blue, under the chin a large dark blue (or black) bib, rounded at the two bottom corners and edged with a jagged band of white bordered very slightly with black. The feathers at the sides of the head are very curious, appearing as if growing in ridges, starting backwards from the white face band. The breast and neck maroon; the back, wings, and tail olive-brown; the eye full and dark; the bill is sealing-wax red at the base, slate-grey at the tip. The feet very dark crimson. The hen is very like the cock, but smaller and more slender in shape, lacking his upright carriage.

WILD LIFE.

Gosse in his "Birds of Jamaica" says of this dove: "The Spanish partridge is not considered as indigenous to Jamaica, though it is frequently imported thither from Cuba. It may yet, however, be found in the precipitous woods of the north side. Albin, Brisson, Buffon, and Temminck attribute it positively to our island."

At the time when Jardine wrote his Naturalists' Library in 1835 (some 12 years before Gosse) he gives a coloured plate of the Black-bearded dove, and the following note in his description: "This bird is a native of the southern islands of America, and is plentiful in Cuba and Jamaica, in which latter island it has obtained from its gallinaceous habits the name of partridge. It lives entirely upon the ground, where it runs with great rapidity, like the above-named bird, the neck being drawn in, and the back forming a curve, by the pendant manner in which it carries its tail. It nidificates upon the ground, and lays several eggs, and the young when hatched soon learn to follow the parent. It has a deep murmuring note, which is not often heard, the bird being of a retired and solitary disposition."

Jardine also remarks that "the tarsi, which are pretty long, are covered with small hexagonal scales." It must be remembered, however, that these two books were written years ago. At the present time I doubt if there is a single *wild* Black-bearded dove left in Jamaica; but even if the facts do not bear on the present day, they are interesting to read as a record of the past.

LIFE IN CAPTIVITY.

The Black-bearded dove is one of the handsomest of his kind, and he seems to know it too, for there is something dignified and imposing in the very walk of a cock-bird in fine plumage. It is a very rare bird, being seldom imported to England, though it has been kept at the Zoo several times since 1864, and bred there six years later.

In the year 1905 a friend in Jamaica sent me three specimens. In his letter to me on the subject he says "the Black-beardeds laid two eggs on the bare boards twice, and being heavy birds broke three out of the four. The fourth egg hatched under common pigeons, and very early found its feet, falling from the pigeon coop and hiding for a few days. I had given it up for a bad job when I was delighted to see it running after its foster parents and clamouring for food."

Cuba is only 90 miles from Jamaica, but owing to the quarantine regulations, little can be done in the way of obtaining birds, though I was once offered a hundred of these doves for a ridiculously small sum per bird if I would take the quantity, the trapper refusing to supply a smaller number. I had to refuse, having no room to house them till they found new homes; but all the same it seemed a pity not to accept a chance of introducing this lovely bird into England again.

My friend in Jamaica had six of these doves altogether in his aviary, but one escaped, ants killed another, and a third disappeared; the remaining three came to me. I found them at first very lazy birds, nothing seemed to disturb their stolidness, not even the cooing and bobbing up and

down of an excitable cock Bar-shouldered dove, who, with tail raised like a spread fan, used to perform before the Black-beardeds. Beyond looking a little astonished they would be quite unmoved. They kept much to the aviary floor, which is tiled, and whether from this cause or not I do not know, but one of the birds got thickened legs (almost like the scaled leg in a fowl). Mr. Newman (to whom I sent the dead bird, thinking he might like the skin) noticed this, and kindly suggested that possibly it was caused through the bird not having grass to walk on, the tiles being too hard. I followed his advice and moved the two remaining birds—whose legs also looked rather thick—into another aviary with a grass flight. Here they wonderfully improved, and further, one bird that had moulted out a lot of *white* feathers (instead of maroon, as they should have been) gradually lost all this, and became its proper colour again.

At the present time my birds have no trace of white feathers in the dark plumage; does it mean that it is a sign of weakness to produce wrongly coloured plumage? In two other cases I have noticed a change of colour—a Diamond dove changing from grey to drab, and a Picui dove from grey to almost black. It would be interesting to know the true cause.

For some years I kept these doves without their making any attempt to nest. I tried them in different places, but without success. In 1907 I put them in a low duck-house with a wire run filled with long grass, partially screened over to make a quiet corner, and I also put a sod of turf in the shut-off shelter in the inner part. But my hopes came to nothing, and in removing the birds to their winter quarters I let one escape. It was off like a rocket, with a very strong and swift flight. I had little hope of seeing the bird again, as it flew towards the town, unless some honest person caught it and answered the advertisement that I at once saw was put out, offering a reward for its return. The remaining bird was shut off in the wire-fronted shelter, and the door of the flight left open, and a pot of food put inside to tempt the truant back if it should return. To my joy next morning the lost bird came back, and it was so hungry and pleased to see its mate again that it was easily caught with some grain placed in a trap-cage. The bird looked puffy for several days,

YOUNG DWARF GROUND DOVE.

Photo by Mr. W. E. Teschemaker. *From "Bird Notes."*

as if the night out of doors had chilled it, but otherwise it was all right.

Next year, in May, 1908, the Black-beardeds started to nest in an old wooden parrot's nest-box, with a hollowed saucer-shaped bottom, fixed a foot or two from the ground. The hen laid one very round egg, which was broken in the nest. Fearing the same thing would happen again if the eggs were laid on the hard wood, I lined the hollow of the nest-box with a wicker nest-basket and some sand and heather, making it all very firm. The birds seemed to like it, for they kept adding more heather, and kept sitting for a few minutes, but nothing came of it, although two more broken eggs were found, supposed to be theirs.

The birds' former owner said of them: "They laid with me on the bottom of a box hung about 4 feet from the ground, and employed no nesting material. More than one egg was 'toe-bored,' and the one young bird I had died quite early; it appeared to need its parents some time after it was fully feathered." I am afraid these doves are too heavy-footed to hope for much success in nesting; the eggs seem bound to be broken if laid on a hard surface, especially as my hen appears to suffer from a weakness in one foot.

At the present time my two birds are in a sunny aviary; they roost side by side always in the same place on a very high perch, but seem to spend nearly all the day on a wide wooden shelf fixed low down across the front of the aviary. This shelf ends in a wooden coop where their food is placed, and a nest-basket sunk in a turf right at the back of the inside, to induce them to breed; but I am afraid it is too late to hope for anything this year. The cock did a great deal of cooing earlier on, but not so much just lately.

The Black-bearded cock is a great favourite of mine, he is so dignified and self-contained; just now he is in perfect plumage, like one feather. The hen has never been so fine a bird; her colouring is much the same as the cock's, but her shape is not nearly so good, nor her carriage so stately. She is rather nervous, and inclined to soon get frightened.

The Zoo had some of these lovely pigeons a little time ago, but I do not know if they have them still or if any other specimens are at present in England, though possibly there may be one here and there. I do not know this dove's value, but it is very rare.

CONCLUSION.

Besides these 40 species of doves and pigeons I have kept, I have also a tiny dove in my collection kindly given me by a gentleman who had got a pair of these birds in Arequipar in Peru. I was told the name of the dove was the Francesian dove (*Palonita francisea*). One of the pair died, the other later found a home with me some five years ago, and is still in fine health and perfect plumage. From some cause, however (some time ago now), it injured one wing and cannot fly, so it is forced to spend its life on the ground. In shape this bird is very like a Passerine, but slightly larger. Its colour is a soft mouse-brown, with a bar right across the wing high up, and several spots lower down of rich metallic purple, very dark. The beak is bright orange, like a blackbird's, for more than half its length, the remaining part, the tip, being black. This little bird is very active, and can run very fast.

I have also kept three other doves that came to me as Malayan Ring doves. All are dead now, but they were very handsome birds, something like the Deceptive dove, but richer and deeper in colour. I took these birds to be two hens and a cock, but they never nested with me. They had rather a tragic history before they landed in England, for the boat they were on in their own land was crossing a lake when a sudden squall came on, and I believe the boat overturned, and out of a very large collection of birds on board only about 60 were saved.

One of my birds was unfortunately attacked by a little Conure, and though not really hurt, I believe the shock affected the poor thing's brain, for it always seemed dazed afterwards. One of the hens was very fond of mealworms; the cock did not care for them.

So ends the story of my doves and pigeons. There are many other kinds I should like to have kept, and have had the chance of keeping, but bird-keeping is an expensive hobby where a number are kept, and so it must have its limits. Perhaps if one *could* buy every bird one wished half the charm and pleasure would be gone, and I am certain that in my own case my aviaries would soon become far too crowded; so whether it is really "sour grapes" or not, there are times when a stern check must be laid on one's inclinations, and it is

as well to impress on yourself you have "no more room" for tempting fresh birds.

And here I wonder if I make a mistake in never parting with my old favourites; their young ones may, and have, to go, or the aviaries would soon be too full; but doves are long-lived—witness my old cock Aurita; I have had him (an adult bird when he came) 12 years, and he looks like living another 12. I have bred Auritas again and again. Should I not be learning more if I parted with the old birds and filled their places with new kinds, then when they had served their turn with others still?

There is not the least doubt one would gain more knowledge with this plan; but I lean to the side of sentiment. I look on my birds and all my other pets as my friends, and true friends are never willingly parted.

Some few years ago hardly anyone kept doves; it was a lonely hobby then, but a change has gradually come about, and many people keep them now, and are learning to properly appreciate them. I keep other birds also—tiny Waxbills and Finches, Partridges, Parrots, and Parrakeets, but if I omit my two favourite parrots, "Cric" and "Max," the softest corner in my heart for my birds is kept for my doves. If you keep birds try them too, and you may soon think as I do, and love them as well and truly.

FINIS.

SMITHSONIAN INSTITUTION LIBRARIES
3 9088 00620 9829